# TEACHING AND LEARNING OF ENGLISH AS A FOREIGN LANGUAGE IN A GLOBAL CONTEXT 

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A thesis submitted for the Degree of Doctor of Philosophy

Faculty of Education, Humanities, and Law
Flinders University, South Australia
November, 2013


#### Abstract

This policy-oriented research investigation is of national significance to Indonesia where the nation's wealth depends for its success on the production of a well-educated workforce who can engage with proficiency in a global dialogue that is conducted largely in English. The ability to communicate in English, as well as Bahasa Indonesia, is becoming increasingly significant in Indonesia in an ever expanding technological age. This study addresses four major issues associated with the teaching and learning of English as a foreign language in a technological university, (a) factors that influence English language proficiency within the university setting; (b) analysing the component skills required for successful language learning; (c) examining the relationships involved between successful language teaching and the kinds of courses offered; and (d) the shaping of policy for the learning and teaching of English, not merely as as a foreign language, but also as a global language.

The theoretical foundations for this study include Carroll's model of the learning of a foreign language, from which his better known models of school learning and general learning were derived. The data for the quantitative aspects of this study are obtained from the university records and database for a sample of approximately 1000 students, where performance is measured on three occasions and who are drawn from a target population of about 4000. Information on the teaching and learning of these students is obtained on the qualitative aspects of teaching and learning from six teachers of these students, and from 30 students in the sample. The ten research questions for which answers are sought and that are directed towards the four specified issues provide evidence for the making of recommendations and for the development of policy by the university staff and other Indonesian policy makers.

It is also expected that the findings of this investigation are highly relevant for the teaching and learning of English as a foreign language in schools and universities across Asia at a time when English is emerging as the global language in the Asian Region for tourism, industry, commerce and technological development.


Key words: English, Foreign Language, Global Context

## Declaration

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed
Ratna Rintaningrum

## Acknowledgements

I would like to thank the many people to whom I am indebted in preparing and writing this thesis.

Foremost, I would like to extend my deep gratitude to Dr. Carol Aldous, my principal supervisor, my critical friend and editor for providing me with fresh ideas, particularly when preparing my research proposal. She sharpened the research questions and the aims of this study. She showed me how to be strong under pressure and how to withstand the many difficulties encountered during the period of my PhD . She supported me not only with her time and love, but also with her energy and encouragement as well as with her critical thinking that enabled this thesis to become a reality. In addition, she challenged me to consider 'what messages or final thoughts can I deliver to the readers of this thesis that will have the greatest impact on the Indonesian community and make a positive contribution to a global society'. That this thesis has transpired is in no small measure due to her, indicating that this challenge has been more than met. My special thanks go to her.

Secondly, I would like to thank Professor Robert Conway, my co-supervisor, for his brilliant ideas in the formation of focus group discussions (FGDs) in this thesis. His advice concerning FGDs gave me confidence in interpreting the results of the FGDs reported in this thesis. It was a challenging situation since this was the first time that I had used FGDs in research. Many thanks go to him.

Thirdly, I would also like to thank Professor John P. Keeves, my non-formal supervisor, my critical friend, and my editor for his invaluable and continuous guidance and assistance. He provided me not only with intellectual enlightenment and guidance but also with moral support and encouragement, without which this work would never have been accomplished. He spent much time carefully reading this thesis which comprises 16 Chapters. His advice and critical thought gave me a pathway to improve its quality, yet without forfiting my independence and critical thinking as a PhD student. I have never forgotten how he encouraged me by saying "keep going, keep writing, and working hard as this is what you want to do". These words encouraged me to work very
hard and to finish my thesis particularly when I needed it most. He motivated and inspired me at every step of my PhD journey. My special thanks go to him.

Fourthly, I would like to thank Mrs. Jane Hogan, the Head of the International Student Services Unit who supported me with important assistance in the completion of my study.

Fifthly, my special thanks go to Flinders University which provided me with the financial support to finish my thesis and to the the Government of Indonesia who awarded me with a scholarship that made it possible for me to undertake this study.

My huge thanks and appreciation go to my beloved husband, Prahara Maghribi, my two beloved children, M. Adistya Azhar and M. Farhan Dzulfikar, who always provided me with moral support, patience and sacrifice during my study. I am also indebted to my parents, my brothers, my parents-in-law, and my brothers-in-law in Trenggalek and in Surabaya for their prayers, encouragement, and advice.

Last but not least, I would like to thank the Government of South Australia who awarded me the '2013 Governor's International Student Award for Academic Excellence', the '2012 Governor's Multicultural Award', as well as the '2012 Australian Day Parade Award'. These awards have in no small way fostered a positive attitude for me to face a global future with optimism.

## Dedication

This thesis is dedicated to my Father who passed away during my PhD journey, my Mother Siti Mardiyah who looked after my father during his sickness, my beloved husband, Prahara Maghribi, and my beloved children, Muhammad Adistya Azhar and Muhammad Farhan Dzulfikar for their endless love and support.

## Table of Contents

Abstract .....  i
Declaration ..... ii
Acknowledgements ..... iii
Table of Contents ..... vi
List of Figures ..... xix
List of Tables ..... xx
CHAPTER 1 ..... 1
BACKGROUND, NATIONAL SIGNIFICANCE, AND GLOBAL CHANGE ..... 1
The Impact of Global Change ..... 1
Should Bahasa Indonesia be the National Language in Indonesia ..... 3
Should English be recognised as the Global Foreign Language? .....  5
A Study of National Significance to Indonesian Universities ..... 6
A Policy-Oriented Research Investigation ..... 7
What are the Major Issues? ..... 9
The General Aims of this Investigation ..... 9
The Issues and the Situation under Investigation ..... 10
English in an Indonesian University ..... 10
The University Context: an Engineering University ..... 12
The Specific Aims of this Investigation ..... 18
Location of Study ..... 19
Specific Reasons for Selecting the Site of this Investigation ..... 19
The Significance of the Investigation ..... 20
Limitations of the Study ..... 21
Organization of this Report of the Investigation and Inquiry ..... 21
The Structural of the Thesis: A Policy-Oriented Investigation, and Inquiry ..... 22
CHAPTER 2 ..... 23
THE NECESSITY TO LEARN ENGLISH IN AN INDONESIAN UNIVERSITY ..... 23
The Emergence of English as a World Language ..... 23
Why the English Language is Studied across the World ..... 25
Socio-Historical Reasons ..... 25
Why is it Necessary to Learn English ..... 26
Access to Economic Advancement ..... 27
Access to Information and Communication Technologies (ICT) ..... 29
Access to Further Education and Research ..... 34
University Internationalization and Globalization ..... 34
Access to Scientific Knowledge ..... 36
English as the Global Language ..... 37
What is a Global Language? ..... 39
Reasons Why English has Become the Global Language ..... 40
The Importance of Evaluation ..... 42
Summary ..... 43
CHAPTER 3 ..... 44
EDUCATIONAL REFORM IN INDONESIA: AUTONOMY AND ITS IMPACT44
Educational Reform in Indonesia: Facing the Global Age and Autonomy ..... 44
Autonomy in Higher Education in Indonesia ..... 45
Autonomy in Academic Affairs, Authority Management, and Funding ..... 47
Law No 9/2009 and the Educational Legal Institutions (UU BHP) ..... 48
The Implications of the Cancellation of the Law No 9/2009 ..... 51
Normative Implications ..... 51
Strategic Implications ..... 52
The Emergence of Law No 12/2012: UU PT ..... 52
Higher Education in Indonesia ..... 52
Indonesia and its Education System ..... 53
Reform in Financing Higher Education in Indonesia ..... 55
Income Generating Activities of a University ..... 56
The Relationships between Educational Reform, Globalization, and the Learning of English ..... 58
Educational Reform and the Teaching of English in Higher Education ..... 59
General Trends of English Language Teaching in Indonesia ..... 59
English is the First Foreign Language in Indonesia: Historical Context ..... 59
The Function and Status of the English Language in Indonesian Education in Schools ..... 61
Educational Reform and its Implications for the Teaching and Learning of English . ..... 64
Implication for Teachers' Competences ..... 64
Implications for the Development of English in Indonesian Education ..... 64
Implications for the Indonesian Government Agenda ..... 66
Implications for Parents’ Awareness in Promoting English in Indonesia ..... 66
Implications on the Creative Ways of Learning English in Indonesia ..... 67
Summary ..... 70
CHAPTER 4 ..... 71
FACTORS INFLUENCING ENGLISH LANGUAGE ..... 71
PROFICIENCY ..... 71
Introduction ..... 71
Achievement and Proficiency ..... 72
Competence, Ability, and Performance ..... 73
Proficiency Tests and Achievement Tests: They are Different ..... 75
Factors that Influence the Development of English Foreign Language Proficiency ..... 76
Student Level Factors ..... 78
The Effect of Gender ..... 81
Socio-Economic Status and Home Background ..... 83
Language Learning Strategies ..... 85
The Learning Situation ..... 86
Social Context Factors ..... 87
ICT in English Foreign Language Teaching ..... 89
The Role of the Language Laboratory in the English Foreign Language Setting.. ..... 91
Examining the Language Context in which the Learning of the English Language Takes Place ..... 95
Summary ..... 96
CHAPTER 5 ..... 98
THEORETICAL FRAMEWORK OF THE POLICY ORIENTED RESEARCH INVESTIGATION ..... 98
Introduction ..... 98
Theories, Models, and Hypotheses ..... 98
Some Definitions in Language Learning ..... 99
Foreign Language and Second language: Different Motivations, Attitude, Situations, and the Language Users ..... 100
National Language, Second Language, and Mother Tongue ..... 104
The Foreign Language - Second Language Cline ..... 105
Situations for Language Learning ..... 107
Implications for Language Teaching Practices ..... 108
Second Language Acquisition (SLA) and Foreign Language Acquisition ..... 109
Theoretical Framework for the Investigation ..... 112
Carroll's Model of Foreign Language Learning ..... 112
The Use of Carroll's Model of Foreign Language Learning ..... 113
Language Aptitude ..... 115
Some Evidence from the Research Studies ..... 116
Ability ..... 118
Opportunity to Learn (OTL) ..... 120
Quality of Instruction ..... 122
Perseverance ..... 123
Summary ..... 123
CHAPTER 6 ..... 125
THE METHODS OF INVESTIGATION EMPLOYED AND QUESTIONS FOR RESEARCH ..... 125
Introduction ..... 125
Ethics ..... 126
Reasons for Using a Multi-methods Design ..... 127
Design Procedures ..... 127
Research Questions Investigated. ..... 130
Secondary Data Collection ..... 131
University Data File ..... 131
Population for Secondary Data ..... 133
General Methodological Considerations ..... 133
The Notions of Influence and Effect ..... 135
Level of Analysis ..... 135
Primary Data Collection ..... 135
Interviews ..... 135
Focus Group Discussion (FGD) ..... 136
Data Analysis Procedures and Computer Programs ..... 137
The Use of SPSS ..... 137
The Ideas of Path Analyses and Structural Equation Modelling ..... 137
The Use of NVivo ..... 138
Summary ..... 139
CHAPTER 7 ..... 140
DESIGN AND OPERATION OF THE INVESTIGATION ..... 140
Introduction ..... 140
Population ..... 140
Phase 1 ..... 141
Operation ..... 141
Source of Information and Data ..... 141
Strategy ..... 143
Instruments ..... 145
Phase 2 ..... 154
Source of Information and Data ..... 154
Strategy ..... 155
Instrument ..... 156
Types of Selection Employed ..... 156
Summary ..... 157
CHAPTER 8 ..... 158
THE STUDENTS AND THEIR CHARACTERISTICS - THE SCALING OF VARIABLES ..... 158
Introduction ..... 158
Criterion Scaling. ..... 159
The Scaling of Rank-Scaled Scores ..... 161
Rank-Scaled and Criterion-Scaled Scoring Procedures ..... 163
Relationships of the Eight Characteristics in the Three Performance Outcomes ..... 165
Bahasa Indonesia ..... 166
English 2t ..... 167
GPA ..... 168
Summary ..... 169
CHAPTER 9 ..... 170
LECTURERS' VIEWS CONCERNING THE LEARNING OF ENGLISH AS A FOREIGN LANGUAGE ..... 170
Introduction ..... 170
Research Question ..... 171
The Purposes of the Study ..... 172
The Characteristics of Learning English as a Foreign Language ..... 172
Designing Interview Questions: Lecturer Level ..... 172
The Results of Analyses ..... 173
Findings from Interviews with Lecturers ..... 173
Dimension: Aptitude ..... 173
Question: How Easy do You Find it to Learn English? ..... 173
Enjoyment ..... 174
Persistence ..... 175
Importance ..... 175
Self-Efficacy ..... 175
Self-Taught ..... 175
Parental Support ..... 176
Practice in Different Contexts ..... 176
Length of Practice ..... 177
Status of the Language ..... 178
Friends ..... 179
Supportive Environment ..... 179
Access to Resources ..... 179
Teacher ..... 180
No-Nativization ..... 181
Initiative and Auto-Didactic Learning ..... 181
Knowledge of Language ..... 182
Dimension: Perseverance and Motivation ..... 182
Question: Why do You Think It is Necessary to Learn English? ..... 182
Economic Reasons ..... 183
The Media ..... 183
Knowledge ..... 184
Technology ..... 184
Education ..... 184
International Communication ..... 185
International Travel ..... 185
Global Language ..... 186
Dimension: Perseverance, Opportunity to Learn and Quality of Instruction ..... 186
Question: What is the Relative Importance in your Discipline of being able to Read, Write, Listen and Speak English? ..... 186
The Importance of being able to Read ..... 186
Curriculum ..... 186
Fluency and Reading Rate ..... 187
Knowledge and Information ..... 187
Pleasure ..... 187
The Importance of being able to Write ..... 188
The Importance of being able to Listen ..... 188
The Importance of being able to Speak ..... 189
Dimension: Opportunity to Learn, Ability to Understand Instruction and Quality of Instruction ..... 190
Question: Describe your Experience in Learning English or What was your Experience in Learning English? ..... 190
Formal Learning ..... 190
Facilities ..... 190
Hard Work ..... 191
Non-formal Learning ..... 191
Experience in Learning to Listen to English ..... 192
Experience in Learning to Read English ..... 192
Experience in Learning to Write in English ..... 192
Experience in Learning to Speak English ..... 193
Dimension: Opportunity to Learn, Quality of Instruction through Technology ..... 193
Question: a) How is Technology Used to Learn English? ..... 193
Question: b) Why is Technology Used to Learn English? ..... 194
Question: c) What are Some of the Obstacles to Using Technology for Learning English? ..... 194
Dimension: Ability to Understand Instruction ..... 195
Question: How could the English Language be Adapted to Meet Better the Learning Needs of students? ..... 195
Placement Test ..... 196
Ability Grouping ..... 196
Curriculum ..... 197
Treatment ..... 197
Opportunity to Learn ..... 198
Dimension: Quality of Instruction ..... 198
Question: What could You do to Assist Students to Learn English? ..... 198
Expectation ..... 198
The Importance of Learning English ..... 199
Motivation ..... 200
Language of Instruction ..... 200
Assessment ..... 201
Consultation ..... 201
Strategy of Instruction ..... 202
Placement Test ..... 202
Methods of Teaching ..... 202
Notes or Handouts ..... 203
Pointing to Resources ..... 203
Homework ..... 204
University Policy ..... 204
Summary ..... 205
CHAPTER 10 ..... 206
STUDENTS' VIEWS CONCERNING THE LEARNING OF ENGLISH AS A FOREIGN LANGUAGE ..... 206
Introduction ..... 206
Focus Group Discussion Trial ..... 206
Procedure for Selecting Cases for Focus Group Discussion ..... 206
Conducting the Focus Group Discussions ..... 207
NVivo and Focus Group Discussion ..... 208
Dimension: Aptitude ..... 209
Question: How Easy do You Find it to Learn English? ..... 209
Opportunity to Use English ..... 209
Enjoyment ..... 210
Motivation ..... 210
Commitment ..... 211
How Lecturers Teach Students ..... 211
Cultural Differences ..... 211
Technology ..... 212
Dimension: Perseverance and Motivation ..... 212
Question: Do You Think It is Necessary to Learn English? ..... 212
International Language ..... 212
Global Language ..... 213
Residential Reason ..... 213
Access to Technology ..... 214
Access to Knowledge ..... 214
Access to Economics ..... 215
Globalization Demand ..... 215
Language of Agreement ..... 216
Passing through Immigration (Customs) Control ..... 216
Academics Reasons ..... 216
Promoting the Country ..... 217
Networking ..... 217
Graduation Requirements ..... 217
Improving Confidence ..... 218
Participation in a Larger Society ..... 218
Entertainment ..... 218
Dimension: Quality of Instruction ..... 219
Question: How can the Lecturer Better Help You Learn English? ..... 219
Strategy of Instruction ..... 219
Speaking Ability in English ..... 219
Professional Development ..... 219
Motivational Strategies ..... 220
Opportunity to Use English (Content-Based Instruction) ..... 220
Opportunity to Learn ..... 221
Providing Handouts ..... 221
Media of Learning ..... 221
Interactive Learning ..... 222
Rewards ..... 222
Role Model ..... 222
Task Familiarity ..... 223
Dimension: Ability to Understand Instruction ..... 223
Question: In What Ways can Learning be Adapted to Meet Better the Ability Needs of Each Student? ..... 223
Pretest ..... 223
Mixed Ability ..... 224
Speaking Ability ..... 224
Using Grammar in a Meaningful Context ..... 225
Dimension: Opportunity to learn ..... 225
Question: How important is it to listen, read, write, and speak English? Is one skill more useful than others? ..... 225
The Importance of being Able to Listen, Read, Write, and Speak English ..... 225
The Importance of Listening ..... 225
The Importance of Reading. ..... 226
The Importance of Writing ..... 227
The Importance of Speaking ..... 227
Talking or Writing to Native Speakers of English ..... 228
Question: What Opportunities or Experience as well as Advantages do You Have toTalk or Write to People who are Native Speakers of English?228
Technology ..... 230
Question: What Experiences and Advantages do You Have (if any) in Learning English through Technology? (such as Computer, Email, Internet, Skype) ..... 230
The Use of E-mail ..... 230
Uploading Material. ..... 231
Watching Movies ..... 231
Opportunity to Write in English ..... 231
Practising Speaking in English ..... 232
Multi-Media Presentation ..... 232
Practising Listening ..... 232
Practising Reading ..... 233
Obtaining Information ..... 233
Computer Application ..... 233
Translation ..... 233
Coding ..... 234
Learning Another Language ..... 234
Demonstrating New Method of Teaching ..... 234
Efficiency ..... 235
Become a Member of a Community or Forum ..... 235
Improving Vocabulary ..... 235
Default Setting ..... 236
Playing Online Game ..... 236
Summary ..... 236
CHAPTER 11 ..... 238
HOW THE ENGLISH COURSE IS STRUCTURED ..... 238
Introduction ..... 238
Four Different Settings of English for Academic Purposes (EAP) ..... 238
Types of English for Academic Purposes ..... 240
The Results of the Interviews and the Focus Group Discussions (FGD) ..... 241
Question: What Type of English is Taught at the University? ..... 241
English 1c Course ..... 241
English 2c Course ..... 242
Question: What do the Lecturers of English Teach to their Students? ..... 243
English 1c Course ..... 243
English 2c Course ..... 245
Question: How are the Skills of English Taught? ..... 247
Listening ..... 247
Teaching Strategies ..... 248
Practising Listening ..... 248
Reading ..... 249
Reading Activities ..... 249
Pre-Reading Activities (Activities before Reading) ..... 250
Writing ..... 252
Speaking ..... 253
Encouragement ..... 253
Knowledge of the Language ..... 253
Grammar and Structure ..... 253
Vocabulary ..... 254
English 2c Course ..... 254
Listening ..... 254
Reading. ..... 255
Structure and Written Expression ..... 257
Summary ..... 258
CHAPTER 12 ..... 260
FACTORS INFLUENCING STUDENT PROFICIENCY IN ENGLISH AND GRADE POINT AVERAGE ..... 260
Introduction ..... 260
Dataset Used in this Study ..... 261
Developing a Student-Level Model Using PLSPATH ..... 264
Correlation Analysis ..... 265
Variables Included in the PLSPATH Analysis ..... 266
Results from the Student Level Factors Influencing English Language Proficiency ..... 271
Outer Model Results for the Student Level Factors Influencing English Achievement271
Grade Score Sample ..... 271
Gender of Student (GENDER) ..... 272
Age at the Initial Stage of the University Course (AGE) ..... 273
Age at the End of the University Course (AGE_END) ..... 273
Prior Achievement (PRIOR) ..... 273
Socio-Economic Status (SES) ..... 275
Faculty of Instruction (FACULTY) ..... 276
Method of Student Selection (SELECT) ..... 276
English 1t (English_1) ..... 276
Year (YEAR) ..... 276
Score of Bahasa Indonesia(BAHASA) ..... 277
Semester (SEMESTER) ..... 277
English Proficiency (ENGLISH_2) ..... 277
Student Learning Outcome (GPA) ..... 277
Inner Model Results for the Student-level Factors Influencing English Language Proficiency ..... 278
Significance of Effects ..... 278
Endogenous Variables ..... 281
Prior Achievement (PRIOR) ..... 281
Faculty of Instruction (FACULTY) ..... 284
Method of Student Selection (SELECT) ..... 284
Score of English 1t (ENGLISH_1) ..... 286
Score of Bahasa Indonesia (BAHASA) ..... 288
Criterion Variables ..... 289
Factors that Influence English Language Proficiency (ENGLISH_2) ..... 289
Student-Level Factors that Influence Student Learning Outcome (GPA) ..... 290
Replication Student-Level Factors Influencing English Language Proficiency (ENGLISH_2) Using IRT Score Sample ..... 292
Outer Model Results for Factors Influencing English Language Proficiency (ENGLISH_2) ..... 294
English Language Proficiency (ENGLISH_2) ..... 294
Inner Model Results for Factors Influencing English Language Proficiency (ENGLISH_2). ..... 295
Summary ..... 300
CHAPTER 13 ..... 302
ASSESSING AND DEVELOPING ENGLISH FOREIGN LANGUAGE PROFICIENCY ..... 302
Introduction ..... 302
Unity Mode ..... 303
Mean, Standard Deviation, Minimum and Maximum Scores ..... 305
Results of Nine Variables Analysis: Unity Mode ..... 306
Effects on Time 2 Variables: Effects on L2, W2 and R2 ..... 307
Effects on Time 3: Effects on L3, W3 and R3 ..... 310
What Relationships Operate between the Nine Variables (Performances) at Time 1, Time 2, at Time 3? ..... 313
Results from the PLS Path Analyses on the Effects of the Course on English Language Proficiency at the University Level ..... 314
Developing Models for English Foreign Language Proficiency Performance: Outward Mode and Inward Mode ..... 315
The Differences between the Models that Involve the Outward Mode ..... 318
Outer Model Results for Model of English Language Proficiency Performance: Outward Mode and Inward Mode ..... 319
Outer Model PLSPATH Result: Outward Mode ..... 319
Outer Model PLSPATH Result: Inward Mode ..... 322
Inner Model Results for Model of English Language Proficiency: Outward Mode or Inward Mode? ..... 324
Inner Model PLSPATH Result: Outward Mode and Inward Mode ..... 325
Developing Model of English Language Proficiency: Outward Mode or Inward Mode? ..... 328
The Effects of Treatment on Proficiency: Exploratory Analysis ..... 329
Listening: Outward Mode Model and Inward Mode Model ..... 331
Writing (Structure and Written Expression): Outward Mode and Inward Mode Models ..... 331
Reading: Outward Mode and Inward Mode Models ..... 332
The Effect of Treatment on Proficiency in the Outward Mode ..... 333
The Effect of Treatment on Proficiency in the Inward Mode ..... 334
Summary ..... 335
CHAPTER 14 ..... 338
MEASURING ENGLISH FOREIGN LANGUAGE PROFICIENCY AS SEPARATE ENTITIES ..... 338
Introduction ..... 338
PLSPATH compared to AMOS ..... 338
SEM and its Family History ..... 341
Theoretical Issues Addressed Using the AMOS Computer Program ..... 343
The Ideas Involved in the Nine variable Model ..... 344
Path Analysis with Observed Variables ..... 345
Re-examining (Refining) Path Models with Latent (Unobserved) Variables ..... 348
Forming and Testing Path Models with Latent (Unobserved) Variables ..... 349
Specifying and Identifying Path Models with Observed Variates ..... 351
Specification. ..... 351
Identification ..... 352
Parameter Estimation ..... 353
The Results of the Hypothesized Nine Observed Variable Model Analysis ..... 354
Initial Results ..... 355
Assessing Initial Model Fit Results ..... 359
Model Re-specification ..... 359
Assessing Model Fit ..... 369
Summary ..... 372
CHAPTER 15 ..... 375
MEASURING ENGLISH FOREIGN LANGUAGE PROFICIENCY AS A SINGLE ENTITY ..... 375
Introduction ..... 375
Research Questions Advanced ..... 375
The Purposes of the Analyses in this Chapter ..... 376
How Well does the Model Proposed in the Study Fit the Data? ..... 376
AMOS Initial Analyses ..... 377
Model Re-Specification ..... 381
The Final Model ..... 385
Measurement Model and Structural Equation Model: Results of Analyses ..... 389
Measurement Model: Result of Analysis ..... 391
Structural Equation Model: Result of Analysis ..... 395
The Indirect Effect of PRETEST on ELPT through NOSTIC ..... 397
Changes Over Time and the Effect of Treatment on Proficiency ..... 398
Change Over Time and the Effects of the Course ..... 399
Summary ..... 402
Is English Foreign Language Proficiency Better Measured as Separate Skills or as Whole Entity? ..... 405
CHAPTER 16 ..... 406
TOWARDS PROFICIENCY IN LEARNING ENGLISH AS A FOREIGN LANGUAGE IN A GLOBAL SETTING ..... 406
Introduction ..... 406
Focus of the Study ..... 407
Discussion of the Findings ..... 408
Issue 1: Factors of Influence ..... 409
Q1. Participant Views ..... 409
Q. 2 Direct and Indirect Effects ..... 413
Findings from Grade Score Sample and IRT Score Sample ..... 414
Q3. Student Outcomes ..... 416
Issue 2: Change of Performance ..... 418
Q4. Course Structure ..... 418
Q5. Time ..... 419
Q6. Form or Reflection of Proficiency Performance ..... 422
Q7. Interacting Entities ..... 423
Q8. Treatment Effects ..... 424
Sources of Information on the Effects of the Courses on Changes Over Time ..... 425
Issue 3: Language Teaching ..... 428
Q9. Nature of Entity ..... 428
Issue 4: Shaping Policy ..... 429
Q10. Implications of the Study ..... 429
Implications of the Study ..... 429
Theoretical Implications ..... 430
Policy Implications ..... 434
Research Implications ..... 437
Conclusion ..... 439
No Single Factor Influences English Foreign Language Proficiency ..... 439
Learning English as a Foreign Language Differs from Learning English as a Second Language ..... 439
English as a Second Language ..... 440
This Study in Overview ..... 440
A Comprehensive Model ..... 441
Towards a Comprehensive Multilevel Model of Learning English as a Foreign
Language in Indonesia and Asian Countries ..... 441
Towards a Better Future for the University ..... 443
APPENDICES ..... 445
Appendix 1.1A: Organization of the Report of the Investigation and Inquiry ..... 446
Appendix 1.2A: Forms of Payment ..... 448
Appendix 1.3A: Opportunity to Learn English: Sixteen Meetings Two hours Each Week ..... 449
Appendix 2.1A: English in India. ..... 450
Appendix 2.2A: Impact of English as the Global Language in the Asia-Pacific Regions ..... 451
Appendix 3.1A: The Law of Educational Legal Entity ( $U U B P P$ ) ..... 456
Appendix 3.2A: The Development of English as a Foreign Language versus Bahasa Indonesia as a National Language in Indonesia ..... 459
Appendix 4.1A: Language Proficiency versus Literacy ..... 463
Appendix 4.2A: A discourse and Discourse ..... 465
Appendix 4.3A: Linking Proficiency to Literacy and Discourses ..... 466
Appendix 4.4A: Macro-skills in English: Reading, Listening, Writing, and Speaking ..... 467
Appendix 4.5A: Factors that Influence English Language Proficiency ..... 469
Appendix 6.1A: Secondary Data Analysis ..... 472
Appendix 6.2A: Variables for the Study under Investigation by Level ..... 477
Appendix 7.1A: English Foreign Language Proficiency Test Instrument ..... 479
Appendix 7.2A: Scoring Information for English Foreign Language Proficiency Test ..... 482
Appendix 7.3A: Descriptive Statistics for Rank-Scaled Scores ..... 483
Appendix 7.4A: Descriptive Statistics for IRT-Scaled Scores Grade Sample ..... 484
Appendix 7.5A: Descriptive Statistics for IRT-Scaled Scores for IRT Sample ..... 485
Appendix 8.1A: Criterion-Scaled Scoring ..... 486
Appendix 9.1A: Key Characteristics of the Speed in Language Learning ..... 529
Appendix 9.2A: Reasons why learners engage in learning English ..... 531
Appendix 9.3A: The relative importance of being able to read, to write, to listen and to speak in English ..... 533
Appendix 9.4A: Experience in learning English as a foreign language ..... 535
Appendix 9.5A: The use of technology in learning English ..... 537
Appendix 9.6A: The relationship between English and technology ..... 538
Appendix 9.7A: Obstacles of Using Technology ..... 539
Appendix 9.8A: Adapting the English language to meet better the learning needs of students ..... 540
Appendix 9.9A: Assisting students learn English ..... 541
Appendix 10.1A: Speed of language learning ..... 543
Appendix 10.2A: Reasons why it is necessary to learn English ..... 546
Appendix 10.3A: Quality of Instruction ..... 548
Appendix 10.4A: Ability to Understand Instruction ..... 551
Appendix 10.5A: The importance of being able to listen, read, write, and speak English ..... 553
Appendix 10.6A: Opportunities or experience as well as advantages students have to talk or write to people who are native speakers of English ..... 556
Appendix 10.7A: Experiences and advantages students have in learning English through technology ..... 558
Appendix 11.1A: Type of English taught ..... 560
Appendix 11.2A: The skills of the English language taught ..... 561
Appendix 11.3A: The way English is taught ..... 562
Appendix 12.1A: Outer model analysis of model replication with 1978 cases ..... 567
Appendix 12.2A: Inner model analysis of model replication with 1978 cases ..... 568
Appendix 15.1A: Model Specification ..... 569
Appendix 15.2A: Fit Indices ..... 574
REFERENCES ..... 580

## List of Figures

Figure 1.1 Changes that Occur Globally ..... 1
Figure 1.2 Description of a Policy-Oriented Research. ..... 8
Figure 1.3 Methods of Student Selection ..... 13
Figure 1.4 Process of University Entry to the University ..... 14
Figure 2.1 Proportions of People Who Speak English in the World 24
Figure 2.2 The Three Socio-Historical Reasons of Why English is Studied in Non- English Speaking Countries ..... 25
Figure 2.3 Reasons why English is Necessary to Learn ..... 27
Figure 2.4 Diversity of Language Used on the Internet ..... 29
Figure 2.5 The Proportion of Languages Used on the Web ..... 30
Figure 3.1 Education System in Indonesia ..... 54
Figure 4.1 Factors Which Influence English Language Proficiency in Specific Contexts ..... 94
Figure 4.2 Three Concentric Circle Model of Englishes. ..... 95
Figure 5.1 Description of the Language Continuum 106
Figure 5.2 Carroll Model of Foreign Language Learning (1962; 1963; 1975; 1989)... ..... 113
Figure 6.1 Flow Diagram Depicting the Process for Developing a Conceptual
Framework for Research in Learning English as a Foreign Language. ..... 129
Figure 7.1 Sources of Secondary Data ..... 142
Figure 7.2 Explanatory Scheme for Learning the English Foreign Language Proficiency ..... 144
Figure 12.1 Data Design ..... 262
Figure 12.2 Path Model with Latent Variables for the Exploratory Examination of English Achievement and GPA (Student Learning Outcome) ..... 268
Figure 12.3 Student Level Model on Factors Influencing English Language Proficiency and Student Learning Outcome (GPA) ..... 283
Figure 12.4 Replication Student-Level Factors Influencing English Language Proficiency (ENGLISH_2) ..... 298
Figure 13.1 The hypothesised model of the nine variables associated with performance assessed on three occasions. ( $\mathrm{N}=1978$ ) ..... 304
Figure 13.2 The graphs relationships of Listening, Writing and Reading from T1, T2 to T3. ..... 306
Figure 13.4 Model of path relationships between the nine variables associated with performance. ( $\mathrm{N}=1978$ ) ..... 307
Figure 13.5 (a) Hypothesized Model of the English Language Proficiency: Outward Mode ..... 317
Figure 13.6 (b) Hypothesized Model of the English Language Proficiency: Inward Mode ..... 317
Figure 13.7 (a) Model of the English Language Proficiency: Outward Mode ..... 320
Figure 13.8 (b) Model of the English Language Proficiency: Inward Mode ..... 322
Figure 13.9 A Model of English Language Proficiency ..... 329
Figure 13.10 The effects of the courses in the outward mode ..... 333
Figure 13.11 The effects courses in the inward mode ..... 334
Figure 14.1 depicts that Parent Socio-Economic Status is identified as Variable 1, ..... 342
Figure 14.2 The Hypothesised Nine Variable Model ..... 344
Figure 14.3 Hypothesized Model of English Language Proficiency for further analysis with AMOS (reflective mode) ..... 349
Figure 14.4 The PLSPATH Nine Variable Model ..... 355
Figure 14.5 The Model of the Interrelationship between Nine Variables on three different occasions ..... 356
Figure 14.6 The Final Nine Variable Model ..... 361
Figure 14.7 Three-Variable Path Model ..... 368
Figure 15.1 Model of English Language Proficiency Recorded with the Unstandardised and the Standardised Regression Coefficients: Original Model ${ }^{\text {a }} 378$Figure 15.2 The Final Model of English Language Proficiency (without Unstandardisedand Standardised Regression Weights) Specified and Identified by the AMOS (version18.0) Program.386
Figure 15.3 Unstandardised Structure of the Final Model of ELP in AMOS ..... 390
Figure 15.4 Standardised Structure of the Model of ELP in AMOS ..... 390
Figure 15.5 Change Over Time for Listening, Reading, and Writing and their Contributions to the Latent Variable. ..... 402
Figure 16.1 (a) Comparison of changes in performance of Listening, Writing, and Reading between T1, T2, and T3 ..... 420
Figure 16.2 (a) Change in performance ..... 421
Figure 16.3 Changes over time indicated by the standardized loadings for Listening, Reading, and Writing and their contributions to the reflections of the latent variables at Time 1, Time 2 and Time 3 recorded in Table 13.13. ..... 423
Figure 16.4 Comprehensive Model of Learning English as a Foreign Language ..... 442
Figure 16.5 A Shift in the Way English is Perceived. ..... 443

## List of Tables

Table 1.1 The questions asked and how they are assessed Error! Bookmark not defined.
Table 5.1 Situations for Language Learning ..... 108
Table 7.1 Items Available from the University Data Files ..... 147
Table 7.2 The Characteristics of the Tests for Grade Sample ..... 152
Table 7.3 The Characteristics of the Tests for IRT Sample ..... 152
Table 7.4 Conversion Table for Rank-Scaled Scores. ..... 153
Table 7.5 Conversion Table for Total Scores ..... 153
Table 7.6 Criterion Selection for Focus Group Discussion (FGD) ..... 156
Table 8.1 Eight Characteristics of Students and their Scores in Bahasa Indonesia, English and GPA ..... 166
Table 9.1 Interview Questions for Lecturers. ..... 173
Table 12.1 Correlations between Latent Variables at the Student Level for Grade Score Sample ( $\mathrm{n}=3995$ ) and Rasch Score Sample ( $\mathrm{n}=1978$ ) ..... 265
Table 12.2 Latent and Manifest Variables Included in Student Level Analysis ..... 267
Table 12.3 Meaning of Scaled Variables ..... 269
Table 12.4 Outer Model Results for Student Level Factors Influencing English Proficiency ..... 274
Table 12.5 Inner Model Results for Student Level Factors Influencing English Language Proficiency ..... 278
Table 12.6 Inner Model Effects for Student Level Factors Influencing English 2 Language Proficiency ${ }^{\text {a }}$. ..... 287
Table 12.7 Outer Model Results for Factors Influencing English Language Proficiency (ENGLISH_2) ..... 294
Table 12.8 Inner Model Results for Factors Influencing ELPT ..... 296
Table 12.9 Inner Model Effect (Direct, Indirect, and Total) for Student-Level Factor Influencing English Language Proficiency (ENGLISH_2) ..... 299
Table 13.1 Nine latent variables and manifest variates included in the analysis ..... 304
Table 13.2 Univariate Statistics. ..... 305
Table 13.3 Direct Effects - Summary Table of Path and CorrelationCoefficients and Variance Explained ..... 308
Table 13.4 Direct Effects - Summary Table of Path and Correlation Coefficients and Explained ..... 310
Table 13.5 Indirect Effects- Summary Table of Path Coefficients ..... 313
Table 13.6 Total Effects- Summary Table of Direct and Indirect Path Coefficients ..... 313
Table 13.7 Outer Model Results for Model of English Language Proficiency ..... 320
Table 13.8 Inner Model Results for the Models of English Language Proficiency ..... 325
Table 13.9 The Indirect Effect - Outward and Inward Mode ..... 326
Table 13.10 Total Effects of the Outward and Inward Mode Models ..... 326
Table 13.11 The Effect of the Course on Proficiency ..... 330
Table 13.12 Summary of the loadings and weights of the three components in the outward mode and inward mode ..... 332
Table 14.1 Manifest (observed) Variates included within the AMOS path model compared with the PLSPATH path model. ..... 351
Table 14.2 The Metric Weight (b), Standard Error, Critical Ratios, p-values and Standardized Weights ( $\beta$ ) of the Hypothesized Model ..... 357
Table 14.3 Covariances ..... 358
Table 14.4 Correlations ..... 359
Table 14.5 Covariance Matrix ..... 362
Table 14.6 Correlation Matrix ..... 363
Table 14.7 Weights (b), Standard Errors (s.e), Critical Ratios (t), p-value and Weights ( $\beta$ ..... 364
Table 14.8 Squared Multiple Correlations and Coefficient of Residual Paths. ..... 366
Table 14.9 Standardized Direct Effects ..... 367
Table 14.10 Standardized Indirect Effects ..... 367
Table 14.11 Standardized Total Effects ..... 369
Table 14.12 Summary of fit measures from Various Sources ..... 370
Table 14.13 Fit Statistics, Residual, Incremental Fit Indices and Indices of model parsimony ..... 371
Table 14.14 Summary of Standardized Direct Effects, Indirect Effect, and Total Effect ..... 373
Table 15.1 Measurement and Structural Models for the Original Model of English Language Proficiency using AMOS ..... 377
Table 15.2 Standardised Residual Covariances ..... 381
Table 15.3 The Use of Modification Indices and Expected Parameter Change to select the Final Model ..... 382
Table 15.4 Regression Weight of Modification Indices. ..... 385
Table 15.5 A selection of fit measures from AMOS Graphics output for assessing adequacy of model fit. ( $\mathrm{N}=1978$ ) ..... 387
Table 15.6 Covariance matrix ..... 388
Table 15.7 Standardised Residual Covariances after model re-specification ..... 388
Table 15.8 Measurement and Structural Models for Model of English Language Proficiency (ELP) in AMOS ..... 392
Table 15.9 Change Over Time and The Effect of the Course on Proficiency ..... 399
Table 15.10 Summary of the standardised loadings of the three components in the outward mode ..... 402
Table 16.1 Grouping the Research Issues with their Research Questions ..... 408
Table 16.2 Samples and scaling employed and compared ..... 413
Table 16.3 Factors that influence English Foreign Language Proficiency ..... 414
Table 16.4 Summary of factors that influence GPA ..... 416
Table 16.5 Changes in the mean scores of the performance over time ..... 421

## CHAPTER 1 BACKGROUND, NATIONAL SIGNIFICANCE, AND GLOBAL CHANGE

"There is no doubt that we are living in a time of a great change" (Sercu, 2005, p. 1).

## The Impact of Global Change

There is increasing awareness that many changes are occurring globally. The rapid changes in Science and Technology as well as the population growth undoubtedly become a major concern. These global changes and their effects are so great and so varied that "no single theoretical framework drawn from a single discipline can explicate it fully" (Rivers, 1968, p. 10). The term 'global change' is not new but it is now a hotly debated multidimensional concept that cuts across all major academic disciplines and in particular, technology, economics, science, sociology, cultural studies, and world history. Change is not exclusive to specific sectors of society, but inclusive, and consequently, it affects all sectors of society. Science and technology, culture, technology and industry, politics, health, trade, economics, business and commerce are all influenced, and above all others, the fields of education. The many changes that occur globally are illustrated in Figure 1.1.


Figure 1.1 Changes that Occur Globally

There is need for a critical examination of the impact of global change on educational processes in general and English language teaching and learning, in particular. This dynamic force of change in this global age greatly affects the teaching and learning of English as a Foreign Language (EFL) across the non-English speaking world. The growing popularity of English as the most widely used language around the world today spreads across most non-English speaking countries. There is a great demand for English instruction that results in competent users of English, particularly, in Asian countries. English has already developed to be the major foreign language in such countries as Indonesia, Malaysia, the Philippines, Thailand, South Korea, Japan, Vietnam, and China and has gained greatly in status across all of Asia.

In Indonesia, where this study takes place, the learning and teaching of English is advertised like a business for both foreign and indigenous people. This indicates that there are very large numbers of adult people and children in Indonesia who are currently learning English. In Indonesia, English language learning is offered in primary schools starting from Grade 4, while in the larger cities of China, the English language is offered starting from Grade 3. The spread of English in Asian countries has identified English as "an Asian language" that is in common usage across countries (McArthur, 2003). Similarly, Fang (2009, p. 1) emphasized that English "becomes the key language in Asia". Therefore, it was not surprising that the teaching and learning of the English language in Asian countries had received a great deal of attention in recent decades (Kachru, 2005). High proficiency in the use of English enables competent users of English to become actively involved both in all parts of their own society and in international affairs. In Asian countries, people who were able to read an English text with comprehension, who were able to write well in English, who were able to listen, and finally who were able to speak well, were likely to have a much greater chance of succeeding in all aspects of international communication (Lo Bianco \& Freebody, 2001).

Thus, chances of succeeding in an academic environment and getting satisfying jobs that are also rewarding financially are, in practice, greater. Moreover, employers, both business and professional, generally demand that graduates from universities have a high level of English language proficiency on entering the workforce since they want employees who are able to participate effectively in the market-place. Proficiency in the

English language becomes an important requirement, in particular, for graduates who want to work for an international company that is part of a large network of other companies around the world. In addition, people who have already worked in some trans-national company that has joint ventures with other companies are now required to have a high level of English proficiency. This is because the employers and managers want their employees to be skilful negotiators in increasingly cross-national and crosscultural work situations, and English is the only common language that is widespread.

Furthermore, people who are already working in an academic environment, such as in a university, are now required to demonstrate that they have a high level of English language proficiency. This is because academic staff are not only required to teach their specialization, but they are also required to do research, to disseminate their knowledge, and write their reports and articles to be published in international journals that are written in English. In particular, in Indonesia, there is a national policy that requires a lecturer who is going to move to a professorial level to have at least three international journal articles written in English (Diknas, 2009). This indicates that only the English language is the vehicle of communication that is recognized. Hence, the demand for the learning of the English language in the context of rapid globalization in the early part of the twenty-first century is extremely great.

In a global economy, being highly literate only in one's own local or national language is no longer sufficient. Nihalani (2008, p. 243) argued that:

A monolingual society is enroute to extinction and total isolationism in the modern world.

This statement emphasizes that proficiency in the English language was necessary in order for a person to be globally literate. In Indonesia where this study is conducted, there is an immense task to educate for and support the development of English as the global language.

## Should Bahasa Indonesia be the National Language in Indonesia

The emergence of English as the global language that is indicated by its prestigious status, namely, as a second or a foreign language, in Asian countries seems to raise three
concerns: (a) Should Bahasa Indonesia be the national language?, (b) should English become the prime foreign language in Indonesia?, and (c) should English be recognised as the global foreign language? The first concern is discussed in the section that follows.

Indonesian language planning and the language policy employed throughout the Indonesian archipelago places Bahasa Indonesia as necessary for both unification and modernization, and not English. This involves the building of a national identity among the large population of 300 million people living on 1000 different islands with many local languages. Bahasa Indonesia was chosen as the national language in 1945, as a symbol of regional identity, independence, and integration. Bahasa Indonesia was developed as a lingua franca, as a link language in a highly diverse nation.

Traditionally in Indonesia, English was rarely used as the medium of communication in the wider society. This was because Bahasa Indonesia was the most common language that dominated public functions (Lauder, 2008). While Bahasa Indonesia was successful in obtaining status, as indicated by the large number of people who used Indonesian in daily communication, English had not been promoted as the language of international communication. This has been demonstrated by those people who had important positions in the Government and they had been shown to have great difficulty in coping with English. Many errors had been observed when they made a presentation. Moreover, most of them had relied heavily upon an English interpreter when they welcomed guests from an English speaking country. Even, highly educated people were not able to read articles written in English. Therefore, they only spoke and wrote their presentation papers in Bahasa Indonesia. The choice of Bahasa Indonesia to become the national language was readily accepted.

A second concern soon emerged. Although English was not used as an official language in government, business, or the education system, English was still seen as the major foreign language to be taught in school and university classrooms (Simatupang, 1999, 64). Thus, Indonesia was different from Singapore, or India where English was chosen as the second language, and not as a foreign language. This was because these countries had historical reasons for the choice of English. These countries were occupied by an

English speaking country and English was largely used as the tool of communication between the colonialist and the indigenous people.

## Should English be recognised as the Global Foreign Language?

The position of English as the major foreign language in Indonesia raises another concern about whether English should also be recognised as the global foreign language. English in a global age is currently being seen as an important language for national development. English is an essential instrument to provide access to international markets, scientific knowledge and technological expertise. Thus, people in Indonesia need to be given the opportunity to learn English since it can influence Indonesia's development in the future.

Along with the rapid development of information technology on the internet, learning English as a foreign language is now becoming essential. Learning English is necessary for economic development, and for the advancement of modern multimodal technology. Many textbooks and international journals that deal with rich information on modern knowledge and technology that are needed for national development are now published in English.

In addition, English is not only a requirement for employment, but it is also being seen as the symbol of education, modernity, and sophistication. Therefore, it is necessary to understand that Modernization and Westernization are different. Although English is assumed to have a prime role as the language of international communication and the most common language used on the internet, various other countries work hard to defend their national identities. Feeling of concern for losing local languages is partly because of the desire to maintain the local values and for local culture to remain. However, seeking to obtain new experience and new knowledge are also necessary to broaden views across the world. It is important for Indonesia to become a modern country without being afraid to become a modern country. Thus, it is necessary for Indonesia to be actively involved in international activities without sacrificing its national (local) identity.

In recognition of the essential nature of English in Indonesian development and modernization, it is important to see English as the global foreign language rather than
merely as a foreign language to be learnt as a school subject. This leads to the building of an Indonesian culture as a primary goal, alongside local cultures as a secondary goal as well as establishing a global culture built around English. However, globalization does not mean countries have lost their own identity in order for their people to be part of a global culture. Moreover, in order to be part of a global culture does not mean that countries must sacrifice their own local and national identities. This is particularly important when it is linked to the high status of English as the global language. Thus English also needs to be employed as a medium of instruction in education as well as a tool of communication in the workplace. Consequently, providing the Indonesian people with greater opportunities to use English is necessary in order that they are able to participate in a global society.

## A Study of National Significance to Indonesian Universities

This is a study of national significance to Indonesia. At the heart of this study is a major shift in the way English is perceived from English merely as a foreign language, to becoming English as the global language. However, before this recognition can occur base line data need to be gathered on the current situation to ascertain what is happening and, in particular, to find out who are succeeding and why, who are not succeeding and why, and what teachers can do to help their colleagues and their students who are not succeeding. The findings of this study can then be used to help shape policy in the future. A major shift in the way English is perceived to be important is necessary to influence what Indonesia as a nation must become in a global world. The shift must start from each university in Indonesia and, in particular, the university in which this study is set.

How can the universities introduce, bring about, and assist the change in the way English is perceived? There is a great deal at stake. Moreover, this is a very significant issue and unless this problem is recognized and addressed, Indonesia's universities are limited in their involvement, and Indonesia as a nation is restricted in its engagement within the global community, especially with respect to the more powerful nations in the AsiaPacific region. This project is much more than a study of teaching and learning. It is about beginning to gather evidence to shape policy in order that development in the
future involving both teaching and learning can be systematically planned and monitored. This is an initial study that involves many challenges for universities in Indonesia.

## A Policy-Oriented Research Investigation

This study is not an experimental study concerned directly with the processes of teaching and learning. This study does not seek to investigate the theories of teaching and learning. The discussion in this investigation of the teaching and learning of English as a foreign language is needed in so far as it can inform the shaping of policy, and the monitoring of growth, and not to advance specifically the theories of teaching and learning of a foreign language. This study uses the methods of inquiry that are considered most appropriate in the situation of interest that involves the monitoring of change and development in the globalization of the use of the English language.

This study is argued to be a Policy-Oriented Research Study (Nisbet, 1997, p. 211; Husén, 1997, p. 251) that is designed to investigate a major policy issue in Indonesian universities using data available from university files. Therefore, this study is not a fundamental research study. Although this study is largely a quantitative study that investigates the mediating and moderating administrative processes at work in a given context, this study is a multi-method study that also involves both qualities and quantities. This study argues that English is the global language and is taught in universities in Indonesia so that students can learn to live in a global world. According to Nisbet (1997, p. 211) and Husén (1997, p. 251), a policy-oriented research study must be demonstrated to be issues based, the issues must be current and important. The purpose of the study is to bring about the recognition of an issue that helps to inform the shaping of policy. The problem to be investigated involves the learning of English that is taught in universities in Indonesia with a high status as the global language and not merely as another foreign language. A definition of policy-oriented research is usually contrasted with fundamental research. Thus it is argued that the distinction between policy-oriented and other forms of educational research can be seen from its purpose, rather than the choice of subjects and method. It is because:

The end products of policy-oriented research are recommendations for decision, action and practice. The products of fundamental research are contributions to knowledge, or theory. (Nisbet, 1997, p. 212)

However, Nisbet continues:
Policy-oriented research usually operates within the context of accepted theory: it does not aim to modify theory, though it may do so incidentally. Similarly, fundamental research does not aim to affect practice, but it may do so indirectly. Policy-oriented research is responsive, whereas fundamental research is autonomous. (Nisbet, 1997, p. 212)

Interestingly, it was also argued that
Since decisions and action necessarily imply the adoption of some theory or interpretation, and theory likewise has long term implications for action, the distinction between the two categories is not as sharp as is sometimes assumed. (Nisbet, 1997, p. 212)

In the context of this investigation that is conducted in a university in Indonesia, a policy-oriented research study has the specific purpose of informing the providers of a compulsory course in the English language that is taught at the university level in an Indonesian university. It seeks to assist in the implementation of the course, monitoring the effectiveness of the teaching provided, and evaluating the course in terms of its specific objectives. It is directed not only towards policy, but is extended to involve practice. It provides the knowledge necessary for decision making. The nature of a policy-oriented research investigation is illustrated in Figure 1.2.


Figure 1.2 Description of a Policy-Oriented Research Investigation

## What are the Major Issues?

Since a policy-oriented research investigation must be demonstrated to be issues based, there are four key issues that form the basis of this study. The four issues are as follows.

1. The identification of factors that influence the learning of English as a foreign language.
2. The relationships that exist among the nature of courses and growth in learning language proficiency over time.
3. The relationship among the component skills and success in learning English as a foreign language.
4. The formulation of evidence based recommendations for shaping policy around the learning of English as a foreign language in a global context.

Thus this thesis investigates the lecturers' of English and students' perspectives concerning the teaching and learning of English as a foreign language. These perspectives are assessed from the results of interviews with lecturers of English and their students in the samples selected.

## The General Aims of this Investigation

Access to tertiary education and the ability to communicate in the global language, namely English, is becoming increasingly significant in an ever expanding technological age. This situation is nowhere more important than in a developing country such as Indonesia where the nation's wealth depends for its growth and success on the production of a well-educated workforce who can engage with proficiency in a global dialogue which is conducted largely in English. Currently access to tertiary education in Indonesia is available for some, but not all, and even those who have access are not necessarily leaving university as proficient users of the English language in all its aspects. Such aspects include reading, writing, listening, and speaking in English.

Consequently, this study investigates a set of issues associated with the provision and conduct of education in an Indonesian university in which it is necessary to facilitate the learning of English as a foreign language through a supplementary program. In particular, the complex relationships, arising between a set of issues involved in the
learning of English as a foreign language at an engineering university in Indonesia are examined. These issues involve factors associated with the methods of student selection, the learning that occurs, both in English as a foreign language and other subjects, and the nature of the institutional program. The personal views and perspectives of both students and staff engaged in the university program need to be considered.

In this way, it is hoped that a set of findings and recommendations may be formulated that can assist in the shaping of future policy for use in other university settings for the mutual benefit of all Indonesian students. The engineering university where this study is conducted has given approval for the conduct of just such a study as this.

## The Issues and the Situation under Investigation

## English in an Indonesian University

Indonesia has already placed great emphasis on the importance of English as an international language that is used in a global economy. English had been recognized as the first foreign language in Indonesia since 1955 (Alisjahbana, 1976; Dardjowidjojo, 2000; Nur, 2003). In Indonesia, the English language has become much more important since it was embedded in The Guidelines of the State Policy (GBHN 1993). Consequently, as a foreign language, English has become an important part of Indonesian schooling and the national curriculum.
Initially the use and mastery of English as a foreign language was clearly stated in Government Regulation No 57/1957/1988 that emphasized the use of English as an important means of communication in universities. Subsequently, this was also emphasized in Government Regulation No 60/1999 on the use of the English language in all higher education. However, the use of the English language at the tertiary level is, in the main, by regulation and English is not used as the general medium of instruction in academic work.

It is important to note that selection for an Indonesian university involves English as one of the subjects examined in the selection process. The university recognizes that students, who have a high level of English language proficiency, are able to succeed both at the university and in future employment. As a foreign language, in Indonesian universities, the learning of English has considerable value since it is the only foreign
language that is identified and taught as a compulsory subject. Thus English is the only foreign language that has a dominant place in all Indonesian universities. There is increasingly greater awareness of the need to equip university graduates with a high level of English language proficiency in order to meet the demands of employers and Indonesian society for entering the professional workforce. Consequently, the universities have established a policy that requires graduates to have a high level of English language proficiency before graduating from the universities. However, the practices introduced do not necessarily consider the factors that are likely to influence success in developing English language proficiency at the university level, such as (a) student background characteristics, (b) opportunity to learn English, (c) opportunity to use English, (d) quality of instruction, (e) perseverance, (f) the availability of modern multimodal technologies, and the (g) experiences of supplementary programs. Nevertheless, universities expect their students to achieve a high level of English language proficiency.

However, the Government of Indonesia has never declared English to be either an official language or a second language. While the policy for using Bahasa Indonesia as the major language that is employed both in education and academic work and daily lives is very successful, this is not so for the use of English as a foreign language. The promotion of English as a language in education, the media, business and commerce in Indonesia is much less successful. The status of English is merely as a foreign language to be learned in a classroom setting. This places a burden on Indonesian learners of English in attaining a very high level of English language proficiency. On the one hand, employers demand that university graduates have a high level of English language proficiency in order to be able to participate in a global market. On the other hand, the promotion of the use of English through the teaching and learning of English as a foreign language has not achieved completely satisfactory results. These circumstances raise a critical question 'How well do university entry and graduation requirements associated with the learning of English as a foreign language meet the demand for English language proficiency in an Indonesian university'?

## The University Context: an Engineering University

The capital city of the province of East Java in Indonesia has a state university. This university has a focus on scientific and technological learning and is situated in a pleasant natural environment. In addition to the main campus, there is a second campus, that teaches the Diploma-3 Program in Civil Engineering, and a third campus, where the Graduate Program in Management is conducted.

The university has a reputation for innovative and proactive relationships with industry and the public service. Recognized as one of the best technological universities in Indonesia, the university provides challenging career prospects for its graduates. Many of its graduates occupy top positions in business and public organizations within Indonesia and overseas. Currently, the university has a wide range of degree and nondegree technology-based programs that are managed within five faculties, namely: Faculty of Mathematics and Natural Sciences, Faculty of Industrial Technology, Faculty of Civil Engineering and Planning, Faculty of Marine Technology as well as the Faculty of Information Technology. In addition, two polytechnics operate under the Institute's management, namely, the Electronic State Polytechnic and the Shipbuilding State Polytechnic.

The university offers 76 courses and six doctoral programs, 13 masters programs, 22 undergraduate programs, six programs for a three-year diploma within the Faculty of Industrial Technology and Faculty of Civil Engineering and Planning, four programs of a four-year diploma of polytechnics and eight programs for a three-year diploma in polytechnics.

## Selection for Higher Education at the University in Indonesia: University Policy

During recent years this university in Indonesia has continued to recruit and expand its number of students each year by providing a variety of procedures for student selection. This number has been expected to continue to increase over time since there were several possible methods of student selection that were gradually introduced.

There are now many different ways for students to attend the university since there are a variety of student fee-paying arrangements in operation at the university. Providing several different modes of student selection is also a way to obtain a greater income for the university. Under such arrangements, state universities charge an initial amount and even a high rate of fees not only to recover costs but also to enable profit to be generated, since there is a relationship between the methods of student selection and the forms of payment to the university. The different methods of student selection employed at the university result in the establishment of different forms of payment (entry fees). The effectiveness of these different methods of selection and related forms of payment has never been examined. The following diagram shown in Figure 1.3 describes the methods of student selection that are undertaken at the university.


Figure 1.3 Methods of Student Selection
PMDK - a method of selection by invitation procedure
SNMPTN - State University Entry National Selection Test

## Methods of Student Selection and their Criteria

Each method of student selection has specific criteria. It depends on which type of selection a student chooses. Each procedure of student selection and its criteria are described in the sections that follow. Further detail about the Modes of Student Selection and their criteria are discussed in Chapter 7. It is necessary to mention that there are relationships between the different methods of student selection and the forms of payment that involve what it costs each individual to get into the university. More details about forms of payment are provided and discussed in Appendix 1.2A.

## Process of Entry into the University

Overall, the process of entry into the university involves three stages. The arrows indicate that the entrance test influences the form of payment at Step 3. The process of entry into the university is illustrated in Figure 1.4. At Step 1 students gain the opportunity to sit for the university entrance test. The students go to the next step (Step 2) that is success in the entrance test with the best students selected. The students who succeed in the test are required to pay the university fees according the type of student selection involved. Therefore, there are various forms of payment that operate at the university.


Figure 1.4 Process of Entry into the University

## The Role of English in the Selection Process in Higher Education in Indonesia

It is important to note that both national and local selections involve English as one of the subjects tested in the selection process, since the university hopes that students who have a high level of English language proficiency are able to succeed both at the university and in later life. As a foreign language, English has a high value since it is the only foreign language that is taught and identified as a compulsory subject in the university. English is the sole foreign language that has such a dominant place in the university. Although the university is an engineering university that is majoring in
science and technology, there is increasingly greater awareness of the need to equip its graduates with a high level of English language proficiency to meet the employers' demands for entering the workforce in a global age. This is also in line with one of the university missions: that is the production of high - quality graduates who are competent in both knowledge and skills, and who are capable of applying, developing and disseminating science and technology in their community, as well as nationally and globally.

## Learning and Teaching of English at the University

English is identified as a compulsory subject at the university that has, however, no English department. As a compulsory subject, English plays an important role to support the university's mission and vision. Students have 16 meetings of one and half hours each week for learning English. For more detail about opportunity to learn English at the University see Appendix 1.3A. Teaching and learning English at the university is also consistent with the university's commitment to provide high quality graduates with a sound academic background and strong personal grounding which can greatly assist them in their professions.

Courses in Advanced English have been conducted each semester at the university since their introduction in 2007 under the management of the English Language Laboratory. However, in June 2009 the university gave the Language Center the authority to manage advanced English courses. The focus for assessment of Advanced English is the English Language Proficiency Test referred to as ELPT. There are more than 1000 students taking the Advanced English course each semester. Thus Advanced English has become a very important subject at the university. At the end of a course, prior to graduation, all students who enrol in Advanced English at this university are required to take the English Language Proficiency Test (ELPT) which assesses their ability to read, to listen, and to write in English as a foreign language. Speaking is not readily tested, with the main reason being given: that testing is time consuming since there are large numbers of student who enrol in English, while the number of English lecturers available is small. Passing this English proficiency test is a requirement for obtaining an undergraduate degree, and this is a declared university policy. This emphasizes that students are
required to have a satisfactorily high level of English language proficiency before they graduate from the university.

It is recognized by both students and teachers of English that for students to have a high level of English language proficiency is not only relevant for graduation, but also relevant for the needs of the market place. Many commercial, industrial and professional organizations, as well as employers not only in Indonesia, but also in other neighbouring countries require graduates from a university to have an English language proficiency certificate, or another specific English language proficiency qualification with a good score that is attached to their job application forms. Consequently, graduates are required to have a high level of English language proficiency if they want to obtain certain advantages and greater opportunities when entering the workforce. A poor level of English language proficiency has been seen by employers and regulatory bodies as reducing the chance of being recruited and possibly leading to the graduates' career becoming stagnant ((Arkoudis, Hawthorne, Baik, Hawthorne, O'Loughlin, Leach, Bexley, 2009, p. 11).

However, it is important to note that although English language proficiency is not the only factor that influences workplace readiness and employment outcomes, English language proficiency is essential for performing well once in the workplace and for maintaining self-confidence in communicating with other people from different language backgrounds and cultures. More importantly it is also necessary for obtaining promotion to higher positions in order to undertake work that involves greater responsibility.

## The English Language Proficiency Test (ELPT)

The English Language Proficiency Test (ELPT) involves the assessment of listening comprehension, reading comprehension, and written expression. Since the test results are scored separately, each aspect tested has its own score. Hence, it is of considerable importance to examine the data obtained from the advanced English course as it can be used to measure and compare student performance particularly in Reading, Listening, and Writing (Structure and Written Expression).

It is also important to note that three Item Response Theory (IRT) scaled tests are administered on three occasions in order to measure learning over a time period of one semester, and are referred to as Pre-test (occasion 1), Diagnostic Test (occasion 2), and English Language Proficiency Test (ELPT-occasion 3) or collectively as the learning of 'change variables'. The occasion 1 test is conducted when students first enter the university (Time 1). The occasion 2 test is conducted before students commence enrolment in the English 2c course (Time 2). The University under survey provides English course 1 that is conducted between Time 1 and Time 2. The occasion 3 test is conducted at the end of the English 2c course (Time 3).

Undoubtedly, the majority of individual students who are from non-English speaking backgrounds must become proficient in English and need formally to learn English in order to communicate effectively with people from different countries and cultures from around the world, particularly, with respect to the roles of English as the global language. Therefore, it is not surprising that many such individuals, only with a lot of effort are able to achieve a satisfactorily high level of English language proficiency in order to graduate from the university.

Moreover, different students through different methods of selection have, at the time of entry, very different levels of skill in acquired proficiency in English. This information is readily available since it relates to the results on the English Language Proficiency Tests (ELPT) conducted before commencing at the university. There are many reasons why some students perform better in the use of the English language than others. This suggests that a number of very different factors can influence student proficiency. Thus, entry to the university, including the effects of the payment of fees and the provision of financial support by the university are also involved in the selection process. The effects of these many different factors need to be investigated in this study.

There was a large body of research findings into such factors at the school level (Carhill, Suarez-Orozco, \& Paez, 2008; Collins, 2000; Commonwealth of Australia, 2002; Considine \& Zappala, 2002; Henderson, 2002; Hungi, 2003; Pallardi \& Rumberger, 2002; Rothman, 1999). These results of prior research at the school level showed that both student and school factors influenced student achievement in English language
performance with respect to reading (Adams \& Wu, 2002; Alderson, 2000; Elley, 1989, 1994; Kobayashi, 2002; Kotte, 2006; Lesaux, Lipka, \& Siegel, 2006; Lietz, 1996; OECD, 2001, , 2003b; Purves, 1973; Rintaningrum, 2007, 2009; Shiotsu \& Weir, 2007), and to listening comprehension (Carter \& Nunan, 2001; Chastain, 1988; Cortazzi \& Jin, 1996; Elkhafaifi, 2005; Ling, 2008; Morley, 1991). However, little is known about the factors that operate at the university level to influence the learning of English in Indonesian universities or in universities in other Asian countries.

Consequently, it is necessary to investigate the many different factors that influence success in learning English as a foreign language in Indonesian universities. In Indonesia there is a lack of research in the field of foreign language learning, particularly at the university level. Information about the specific situation at the university level is required. Some previous studies had sought to obtain opinion but did not undertake quantitative research. Lauder (2008, p. 10) said very succinctly "there are relatively few 'hard' facts".

The information that describes in some detail the situations operating in the schools and universities of Indonesia, and in particular, the university within which this investigation is conducted is essential background information, prior to the statement of the specific aims of this investigation.

## The Specific Aims of this Investigation

The specific aims of this study can now be stated.
(1) This study aims to identify the lecturers' of English and students' views concerning the learning of English as a foreign language.
(2) The study aims to identify the factors and skills that influence the attainment of English Foreign Language Proficiency at a specific university in Indonesia.
(3) The study aims to identify the student level factors and skills that influence student learning outcomes.
(4) The study aims to identify how the English course is structured at the University.
(5) The study aims to identify whether there are interrelationships between variables operating from Time 1 to Time 2, between Time 2 and Time 3, and from Time 1 to Time 3?
(6) This study also aims to identify whether the skills operating at Time 1, at Time 2 and at Time 3 form or reflect competence in English language proficiency.
(7) The study aims to examine change over time in the levels of English language competence, the influence of particular skills and the conceptualization of the structure underlying the skills of reading comprehension, listening comprehension, and writing (structure and written expression).
(8) The study aims to investigate the effects of the structure of the English course on change over time in English Language Proficiency.
(9) The study aims to measure whether English is better taught as separate skills or as a single entity.
(10) The study aims to shape policy to improve the learning of English as a foreign language in Indonesia for the mutual benefits of Indonesian university students.

## Location of Study

## Specific Reasons for Selecting the Site of this Investigation

This study is conducted in one university in Indonesia. In this study, access to the data and information must be provided by the engineering university in Indonesia where this study is conducted. The easiest place to do a study of this kind is in the researcher's own university, because the researcher has Indonesian Government support and is being paid by an Indonesian university.

Thus there are four reasons why this university is chosen as the research site.
(1) The researcher knows the institution well.
(2) The researcher works there. Therefore the researcher can obtain permission to access the necessary information and data.
(3) This is a seminal study. Before the researcher goes to several institutions, it is necessary to obtain initial answers to the research questions from a pilot study.
(4) The researcher seeks to derive a practical perspective on the learning of English in a tertiary institution whose core business is not primarily the learning of foreign languages and in particular English as a foreign language, as well as other foreign languages.

Subsequently, it may be desirable to undertake an investigation in several institutions, or perhaps, to draw a sample of institutions from across Indonesia. There are three stages of investigation: that can involve (a) one institution, (b) more than one institution, or (c) a larger sample of institutions. In this initial study, a decision is made to undertake the investigation in a single university.

This study is primarily concerned with issues associated with the conduct and provision of education in an Indonesian university in which it is necessary to strengthen the learning of English as a foreign language through a supplementary program in order to support the development of English as the global language. The issues concerned with the globalization of the use of English are addressed in greater detail in Chapter 2.

## The Significance of the Investigation

This investigation is considered to be highly significant for the following reasons.
(1) The outcomes of this study are likely to help the learners of English improve their English language proficiency level in Indonesian universities. The identification of the student level factors that influence English language proficiency can contribute to the development of a theory of foreign language learning that applies to students studying the English language at other universities in Indonesia and South-East Asia.
(2) The results of the study are expected to provide a comprehensive model or framework for learning English as a foreign language in universities in Indonesia.
(3) In the global market, societies in general and employers in particular, often demand that graduates enter the workforce with a high level of English language proficiency. This study seeks to contribute to the discussion on the nature of the level of English Language Proficiency required in order that targeted assistance can be identified and provided for students who have difficulty in comprehending reading, comprehending listening, and writing in the English language. However, issues related to the speaking of the English language are not addressed in this study.
(4) Therefore, the results of the analyses may assist universities to produce highly competent graduates for the workforce both nationally in Indonesia as well as globally.
(5) Although there are a number of studies undertaken in the area of reading comprehension, listening comprehension, and structure and written expression at the school level, few studies have investigated policies and practices in operation at the university level, particularly in Indonesia.

## Limitations of the Study

Since this study involves the analysis of secondary data, several aspects limit the purpose, design and conduct of this study. The project is limited to an investigation that involves the following aspects.
(1) The sample is drawn from only one university in Indonesia. Therefore, generalization beyond these students and this university must be made with caution.
(2) Secondary data are collected from the chosen university and therefore the data are limited to the variables accessible in the university's data file.
(3) The study is only concerned with reading, listening, and writing, but not speaking. For several reasons, a speaking test was not available for use in this study.

## Organization of this Report of the Investigation and Inquiry

This report on the findings of a policy-oriented research study consists of 16 chapters. (The detailed content of each of the 16 chapters is presented in Appendix 1.1A). The 16 chapters can be grouped into six areas of investigation and inquiry and the list of the six areas and the 16 chapters follows in Table 1.1. The thesis is built around four issues that are advanced earlier in this chapter and these issues are amplified in 10 specific aims. However before these aims are reformulated as 10 research questions it is necessary to consider the context and setting of the investigation.

## The Structural of the Thesis: A Policy-Oriented Investigation, and Inquiry

## I. The Purpose and Design of the Investigation

1. Background, National Setting and Change

## II. The Context and Setting of the Investigation

2. The Necessity to Learn English
3. Educational Reform in Indonesia, Autonomy and Its Impact
4. Factors Influencing English Language Proficiency

## III. The Structure, Method and Samples of the Investigation

5. Theoretical Framework of the Policy-Oriented Research Investigation
6. The Methods of Investigation Employed in the Study
7. Design and Operation of the Investigation
8. The Students and their Characteristics - The Scaling of Variables
IV. The Qualitative Phase of Inquiry: Phase 2
9. Lecturers' Views Concerning the Learning of English as a Foreign Language
10. Students' Views Concerning the Learning of English as a Foreign Language
11. How the English Course is Structured

## V. The Quantitative Phase of Inquiry: Phase 1

12. Factors Influencing Student Proficiency in English and Grade Point Average
13. Assessing and Developing English Foreign Language Proficiency
14. Measuring English Foreign Language Proficiency as Separate Entities
15. Measuring English Foreign Language Proficiency as a Single Entity

## VI. Concerning the Investigation and the Formulation of Policy for Change in a National and Global Context

16. Towards Proficiency in Learning English as a Foreign Language in a Global Setting

It is necessary to emphasize that this thesis contains the argument and report of a policy oriented research investigation and differs from a scientifically based or experimental inquiry into a specific aspect of a well defined field of learning. Consequently, this report differs from the traditional structure of a thesis or disputation that is commonly presented in the fields of Education, which are discipline oriented.

## CHAPTER 2 THE NECESSITY TO LEARN ENGLISH IN AN INDONESIAN UNIVERSITY

## The Emergence of English as a World Language

The emergence of English as a World language is now indisputable. Crystal (2000) and Nunan (2001) as well as British Council (2013) argued that the spread of English provided unlimited access to the modern world of science, information and communications technology (ICT), money, power, international communication, and intercultural understanding as well as entertainment and many more fields. English has been said to have official status in 60 countries as the second language and has a prime place in 20 more countries as the major foreign language (Yang, 2001). It is widely recognised that English is the native language of five countries: the United States, the United Kingdom, Australia, New Zealand, and Canada.

In addition, there are more than 50 countries and of the approximately 200 countries that are listed by the United Nations Organization that are members of the British Commonwealth of Nations and that participated in the Commonwealth Games in 2014 and that are linked together historically through the British Empire and through the use of the English language. India is a particularly important case and is discussed in Appendix 2.1A. Furthermore, Nunan (2003) indicated that the emergence of English as a global language was having considerable impact on educational policies and practices in countries in the Asia-Pacific Region, in particular in China, Hong Kong, Japan, Korea, Malaysia, Taiwan and Vietnam. Further information on the educational impact of the English language in these seven countries is given in Appendix 2.2A.

There is no single source of statistical information on language totals and an estimate of the number of speakers. Thus, estimation is taken from a variety of sources. From a seven billion world population (World Bank, 2013), it was reported that over 1.5 billion people spoke English (Crystal, 2000). This included 400 million people who spoke English as their mother tongue in Britain, the United States, and the Commonwealth (Guo and

Beckett, 2007). Over a billion people spoke English as a second language or a foreign language. Faltis (2006) reported that about a million migrant and immigrant people spoke English as a Second Language (ESL) and school-age students learned English. Moreover, there were about 560,000 international students in the United States (Open Door, 2006) and 137,000 students in Canada (OECD, 2003). Kachru (2005) argued that there were about 533 million learners and users of English in China and India, more than those in the United States, the United Kingdom, and Canada put together. From the seven billion world population (78\%), British Council (2013) estimated that by 2020 two billion people ( $22 \%$ ) will be using it.Thus, about a third of the world's population were in some respects exposed to English. Moreover, British Council (2013) argued that

And it is economically active. The thought leaders, the business decision makers, the young, the movers and shakers present and future who are learning and speaking English. They are talking to each other more and more and English is the 'operating system' of that global conversation. (p. 1)

The proportion of people who speak English can be illustrated in Figure 2.1 that follows.
Number of People Speaking English


## Figure 2.1 Proportions of People Who Speak English in the World

English is the main language in international research reports, academic journals, and cross-national and international communication, and the main language of international electronic and non-electronic media. This is strengthened by the fact that English is largely used in international academic conferences, education, trading, business and commerce, broadcasting, travelling, Olympiads, and entertainment.

This chapter presents some of the many reasons why English is studied world-wide and why in all countries it is now necessary for people to learn to speak English if
opportunities are available. Some reasons such as access to commercial and economic documents, professional and industrial knowledge, use of information and communication technologies, the globalization and internationalization of higher education, and knowledge of the findings of scientific research are discussed in detail. The impact of English as the emerging global language is necessarily considered.

## Why the English Language is Studied across the World

## Socio-Historical Reasons

Lewis and Massad (1975) argued that there were three socio-historical reasons that were advanced to explain why English was studied so widely across the World. First, English was the traditional national language of such influential countries as the United Kingdom, the United States, and Australia as well as of parts of Canada. Second, English was a major language of many British ex-colonial countries, such as India, Malaysia, Singapore, and several African nations. In those ex-colonial countries where the indigenous languages remained strong, English continued to be used, was widely spoken in society and developed and grew alongside the indigenous languages. English commonly played an important part in basic education in these countries. Third, English was the major language of wider communication, and consequently played an important role in higher education and in the instruction of those students, who majored in science and technology, and in secondary schools for those students who proposed to enter the professions. The three socio-historical levels of operation are illustrated in Figure 2.2.


Figure 2.2 The Three Socio-Historical Reasons of Why English is Studied in Non-English Speaking Countries

Furthermore, Lewis and Massad (1975, p. 18) argued that because of these three sociohistorical reasons as well as for some other minor reasons:

The place of English in education is complex and more bewildering in the variety of its interrelationships with other areas of the curriculum than most other languages at present, or of the "common languages" of past civilizations such as Aramaic, Greek or Latin.
However, Lewis and Massad (1975, p. 19) added that:
The variety of relationships that English enters into with the other languages spoken and taught in the various countries cannot be expressed by any numerical statement.

This is because English serves different purposes and has a different status in different countries. This also indicates that although English is identified as the national language in certain countries, it may not be the native language of a substantial minority of the population in those countries. For example, in the United Kingdom, in the United States, and in Canada, English competes with the languages spoken by immigrants and with the indigenous languages. Moreover, even though English is taught as a foreign or the second language in many countries of the World, among those countries there are important differences in the modern English usage that is taught. Thus, the English usage that is taught as a foreign language in Japan in some respects is different from the English usage that is taught as a foreign language in Indonesia. This arose because the Government of Japan realized that its status as a world economic power depended on communication in English. As a consequence many companies and language schools offered English classes for employees who worked in business and commercial enterprises since English was increasingly required in the work place by these employees. Consequently, it can be shown that English usage as a subject being taught at school and at the university level in Japan differs greatly from the usage of English taught in Indonesia, where opportunities to learn and use English are very limited.

## Why is it Necessary to Learn English

In non-English speaking countries it now appears that after the teaching of the national language, there is no aspect of language teaching anywhere in the world that is more
important than the teaching of English literacy (i.e. reading, writing, speaking and listening, and viewing) since English literacy is the foundation skill for other learning outside the national setting. Individuals who are able to demonstrate higher levels of English literacy are more likely to succeed not only in their schooling, but are able to be employed and also able to participate in social and economic activity on a world-wide basis.

Figure 2.3 illustrates six reasons why it is now necessary to learn English. These reasons are discussed in the sections that follow.


Figure 2.3 Reasons why English is Necessary to Learn

## Access to Economic Advancement

One of the many reasons why people had learnt English was to support and promote economic development. In a post-industrial economy it was argued that the English language proficiency of workers at all levels took on a new significance (Cameron, 2000; Cope \& Kalantzis, 1993; Gee, Hull, \& Lankshear, 1996). Communication skills and the ability to adapt to new technology, as well as competence in English and other foreign languages (Kumaravadivelu, 2008), represented valuable 'linguistic capital' (Bourdieu, 1991). Thus languages were coming to be treated more and more as economic commodities, and this view was displacing traditional ideologies in which languages were primarily symbols of cultural, ethnic or national identity (Heller, 1999a).

English language literacy was also argued to be fundamental to all forms of personal learning, as well as intellectual growth both in school and out of school. Moreover, in a twenty-first century global society, a literate population in the English language was in some countries considered to be a most valuable asset for a nation's social and economic development. Moreover, being illiterate in English in these countries was a serious threat both to economic performance and social cohesion (OECD, 1995, p.13).

Furthermore, it was contended that:
In recent years, adult literacy has come to be seen as crucial to the economic performance of industrialised nations. English literacy is no longer defined merely in terms of a basic threshold of reading ability, mastered by almost all those growing up in developed countries. Rather, literacy is now seen as how adults use written information to function in society. Today, adults need a higher level of English literacy to function well; society has become more complex and low-skill jobs are disappearing. Therefore, inadequate levels of literacy among a broad section of the population potentially threaten the strength of economics and the social cohesion of nations. (OECD, 1995, p. 13)

Heckman (2000, 2005), a Nobel Prize winning economist, supported these assertions and has given an overview of the economic aspects of human skills formation. He argued that

English literacy competence was an essential area of learning investment in the young, being a skill that begets many other, because it constitutes a key part of our capacity to increase our capacity. (Heckman, 2000, 2005)

In the twentieth century the English language spread across the world through the transnational corporations (Gray, 2005). The emergence of corporations that were originally based in industrial countries such as the Netherlands, the United States, England, Germany, France, or Japan formed joint ventures with local companies in non-Englishspeaking countries, including Indonesia. Although the purpose of a joint venture was primarily for commercial gain, both oral and written communication between workers in business and industry from different countries and cultures were increasingly conducted in the language of English. With the rise of joint enterprises, it was also necessary to increase the provision of the local hotel and tourist industries. This was accompanied by providing training in these industries for the staff in oral and written communication skills in the English language. Moreover, business and legal documents were frequently
written in English. Consequently, more English courses needed to be taught across the country in both schools and universities.

No longer is the capacity of successful living limited to the local or national environment. Since the learning and teaching of languages are coming to be treated more and more as economic commodities, it is also necessary to make choices about which languages to teach or learn. Resources are also allocated for language education and for innovative teaching methods and strategies, such as bilingual education, alongside the introduction of English at earlier stages of education. The rise of private English schools or English courses in some countries, including Indonesia, indicates an increasing awareness by educational authorities of the importance of investing in the teaching of English for economic benefit to adult learners, including the educated parents of young learners. This is based on the argument that success in English leads to succeeding in a global market.

## Access to Information and Communication Technologies (ICT)

Pimienta (2005) argued that English was the most common language used on the internet and on web pages. Figure 2.4 illustrates data on the proportion of Internet users in each language Group (Pimienta, 2005, p. 28).


Source: Global Reach 2005 (http://global-reach.biz/globalstats/index.php3).
Figure 2.4 Diversity of Language Used on the Internet

Moreover, Kimlova and Semradova (2012, p.1) argued that "Present trends in the teaching of foreign languages attempt to react to new challenges and changes in education." It is undoubtedly true that the language of ICT is now English. English is the language most commonly used on the internet, although it has been argued by some that this situation might change (Nihalani, 2008). However, it is far too early to predict that the use of English on the internet in Indonesia may be replaced by another language, such as Chinese, Japanese or Bahasa Indonesia.

Pimienta (2005) argued that the use of the English language on the internet increased dramatically from 1996 to 2005 . Figure 2.5 shows that compared with 12 other languages in the sample, users of the World Wide Web commonly use the English language. Figure 2.5 depicts proportion of languages used on the Web.


Figure 2.5 The Proportion of Languages Used on the Web
Source: O’Neill, Lavoie and Bennett, 2003.
Figure 2.5 shows that among the 12 languages surveyed from the 1999 sample of 2229 random websites, English is clearly a dominant language with 72 per cent of the total websites surveyed.

Moreover, Pimienta (2005, p. 57) reported O'Neill's, Lavoie's and Bennett's finding and stated that

The follow-up survey conducted in 2002 shows the proportion of English on the Web to be fairly constant, in relation to the previous study, although small differences appear among the other languages.

Although for non-English speaking people it may seem undesirable that English and not another language is used so extensively on the internet as well as on the Web, the view that there are some very strong reasons behind this practice cannot be rejected. First, a great deal of current information is written in English and published through the internet in a way that enables people to have access to it. Second, a large number of scientific and many other forms of academic publishing are written in English. This indicates that the high demand for English in universities and industry is likely to continue to increase in order to support both commercial and industrial development. This is endorsed by the fact that the Tenth Asia TEFL (Teaching English as a Foreign Language) International Conference in October 2012 in New Delhi, India had the theme "Tertiary English Education in Asia."

The widespread use of information and communication technologies (ICT) is argued to be one way to address the issue of teaching English as a foreign language. There is no doubt that technology and the English language have prime positions in the global market. The emergence of multimodal sophisticated technology in this global age and the rapidly changing nature of the tools, such as the facebook, the internet, computer, skype, webcam, video-conference, ipad, and iphone enable people around the world to have socalled 'virtual interaction'. Attending lectures in universities can also now be undertaken as virtual activities.

Nallaya (2012) argued that technology had a marked influence on English language proficiency. In addition, Nallaya's study (2013) found that the use of technology was able to bridge both formal and informal learning. The emergence of sophisticated technology, slowly but surely demanded that people needed to be literate not only in a national language but also in the use of complex multimodal technology and the English language (Cope \& Kalantzis, 1993). The rapid changes in the global age such as in science and technology required that "People must be able to adapt continually to science, technology and to the pressures of social integration, participation, developments
and democratisation" (Unesco, 1997, p. 5). It was also argued that the world was more visual than before, so that understanding images was as important as understanding words, consequently visual skills also needed to be developed. Thus, visual skills were now also required as a consequence of the rapid advancement of multimodal technology. It was because

New software allows children to construct any combination of simple machines, which helps in the development of reasoning skills, including spatial, causal and design thinking. Another important class of micro world is tutoring environments for typing, spelling and foreign languages. (Anderson, 2005, p. 141)

Furthermore, in parallel with the needs of society, global literacy had to be seen as the tool for learning throughout life. Consequently, having English language proficiency was also essential for "innovation, for mobility and adaptation to change" (Lo Bianco \& Freebody, 2001, p. vii).

However, since English dominates the electronic revolution, such as the Internet; requiring a high level of English proficiency is perceived as a crucial skill. People must be able to access, read, and interpret the content of an international electronic journal written in English easily and quickly through the internet. Therefore the role of English in the development of technology is undoubtedly essential. Specter (1996, p. 1), in order to undertake higher education, argued that:

To study molecular genetics, all you need to get into the Harvard University Library, or the medical library at Sweden's Karolinska Institute, is a phone line and a computer ... and, it turns out, a solid command of the English language. Because whether you are a French intellectual pursuing the cutting edge of international film theory, a Japanese paleo botanist curious about a newly discovered set of primordial fossil, or an American teenager concerned about Magic Johnson's jump shot, the Internet and World Wide Web really only work ...if you speak English.

This statement emphasizes that learning English is the only way to advance if a student tries to take advantage of the internet. Proficiency in English enables people to read and interpret information without travelling to the original place from where the information derives. Moreover, proficiency in English opens up opportunities for people with different national languages and cultures to communicate with each other and share
information. It has been argued that "along with computers and mass migration, the English language has proved to be the turbine engine of globalization" (Nihalani, 2008, p. 243).

Furthermore, an immense body of software is being produced and the instructions that are used to operate the software are generally written in English. Automatically, this requires people to have a high level of English proficiency in order that the software can be effectively operated and made to work properly.

It is not generally realized that such technologies are dependent on the English language, and people are using the English language behind the scenes of daily life. Another example is the software within word processing programs that: (a) use only menus that are available in English, (b) identify words written in English, (c) suggest words or dates written in English, (d) underline in red colour as wrong these words that are not written in English, and (e) correct misspelling automatically those English words when users are typing on the computer. Still another wide-spread use of the English language is a machine that is designed to answer automatically when someone is called on the telephone but he or she is not there. There is also an automatic reply that is given in the English language: (a) asking for an email address, (b) giving an automatic instruction on a mobile phone when communicating with a phone provider, or (c) redirecting the phone calls.

Although today's society is fuelled by technology, it must be recognized that technology is not able to operate without the tools of communication to achieve globalization. Technology is able to solve the problem of distance through the non-local network; however, a common language is needed.

In the context of a higher education, students now spend much of their time working at a computer. Searching for material, uploading material, downloading journal articles, taking an on-line course, making personal home pages, conducting an on-line chat, or doing their assignment are all conducted using a computer. The language of computers is

English. A strong bond between computer technology and the English language now exists in the modern world.

## Access to Further Education and Research

The increase in the number of students from Indonesia who are studying in Englishspeaking countries or undertaking a student exchange provides strong evidence that the English language is being used more extensively as a communication tool in academic work. Students who come to Indonesia from other non-English speaking countries are required to have a satisfactorily high level of English language proficiency in order to adapt successfully to working and learning in their new environment in Indonesia, since English has become the common language.

Furthermore, a large number of students from non-English speaking countries, such as Indonesia, China, Malaysia, Singapore, India, Bangladesh, Germany, Iraq, Iran, Saudi Arabia, Lebanon, and Palestine are interested in working and conducting research in an English speaking country such as Great Britain, Australia, Canada, and the United States. For obvious reasons such students are required to have a high level of English language proficiency, and this proficiency must be certified in order to have the opportunity to undertake study and research. Thus, the internationalization and globalization of education and the teaching and learning of the English language are strongly interconnected both in Indonesia and the surrounding countries.

## University Internationalization and Globalization

The English language has an important and perhaps a unique role in the higher educational context. Some universities in Asia such as in China (Yang, 2001), Japan (Manakul, 2007) and Hong Kong (Kirkpatrick, 2011) have reshaped their education policies in order to internationalize their higher education. English has expanded its status as a language in the internationalizing of universities in Asian countries, such as China, Hong Kong, Japan, and Singapore.

It has been argued that "knowledge of foreign languages has often been considered an important indicator of internationalization of higher education" (De Wit, 1997, p. 27). At the end of the nineteenth century, China introduced a higher education system from the West (Altbach, 1992; Hayhoe, 1996). Consequently, the learning of foreign languages had become one of the basic means of China's development during the twentieth century (Yang, 2001). Manakul (2007) reported that a university in Japan such as Hokkaido University, one of the largest and the oldest Japanese universities had also recognized the importance of English as the critical language in internationalizing its university. Thus English was used as the language of instruction in the Hokkaido University. Moreover, Kirkpatrick (2011) reported that 75 per cent of the Hong Kong Government-funded universities used English as the medium of instruction in its institutions of higher education.

An important book has recently been published to provide evidence from an analysis of the emerging patterns of strategy, practise and research that was concerned with how universities in different countries of the world were responding to internationalization and commercialization. The book was a study of higher education in the global market place from theoretical, strategic and managerial perspectives by a team of scholars from Australia, China, England, Israel and the United States led by Maringe and Foskett (2010) from the University of Southampton in England.

A set of seven propositions were advanced about a global higher education system, and were systematically examined in the text and revisited and summarized in the closing pages. The key trends in higher education across the world were identified and a view of the higher education scene advanced with respect to how current develpoments towards internationalization would have shaped universities by 2021. In addition, a model was proposed for conceptualizing and analysing the impact of globalization on higher education. While the global context of change was viewed from economic, political, ideological and cultural perspectives, globalization was considered primarily to involve the creation of global relationships that were based on free markets, trade and economic activities between nations. This was a realistic view that was consistent with Bok's (2003) examination of higher education in the United States.
[However, this view would appear to have overlooked the challenges facing the seven billion people living in planet Earth of the population explosion, the problems believed to exist with respect to climate change, the demand for new sources of energy, the planning of sustainable development and the shortages of adequate supplies of food and water in many countries of the World.]
It was to the universities and their research institutes that it was necessary to turn in order to solve the many problems, as well as to education in schools at all levels, particularly in the developing countries.
A broader view of globalization was required. [Moreover,] the spread of democracy through higher education warrants consideration and managerial. Leadership must come from the universities since solutions were essentially educational as well as being political, ideological and cultural. [Nevertheless,] This book is of great importance in so far as solutions can only be found through the education of the present and future populations of all countries of the World who are being led by and through those who benefited from higher education. In addition, internationalization is critical for the development of an understanding of the problems and nature of the solutions required. [However,] The role of English language teaching in universities was [only] raised by Yumei (2010, pp. 225-238) from China in this important book. Reference to an aspect of Yumei's chapter is made in Chapter 2 of this present volume.

## Access to Scientific Knowledge

It was also widely argued, both by researchers and other scholars as well as linguists and translators, that English is the language for the dissemination of the huge amount of information and knowledge on recent research. Evidence based research found that English was indeed "the strongly dominating language for the communication of research on an international level" (Swales, 1985, p. 3). Strong evidence was reported by Wood (1967), Baldauf and Jernudd (1983a) who showed that over the period of 16 years all the five disciplines that were examined published findings in the English language. Furthermore, Baldauf and Jernudd (1983b) provided evidence of the predominant use of English (75\%) in research followed by French (5.5\%) and Spanish (4\%) having much smaller percentages. Swales (1987) also estimated that each year 50 per cent of the
millions of academic and research papers were published in English. It is clear that over the past 50 years, English has become the major language for scholarly publication. This percentage is estimated to grow year by year. English is currently the undisputed language to access knowledge.

## English as the Global Language

In 2010 the English Asia TEFL International Conference held in Vietnam took the theme "Teaching English as a Global Language: Creating and Sharing the Asian Framework of Practice." The theme of the conference reflected the importance of changing the perception of English as merely a foreign language being taught in Asia in universities to English as a global language. This important statement was emphasizing that the spread of English as a global language all over the world, including the AsiaPasific region, had greatly influenced the policies and practices of language teaching in higher education in Asian countries.

Although there are a few other languages that have some legitimation from the United Nations Organizations as international languages such as Arabic, Chinese, French, Russian, and Spanish, there is no doubt that English is the global language that has spread most rapidly all over the world during the twentieth century, and millions of people are now able to speak the language. English is thus able to gain the highest position in international activities, such as trade, business, and political negotiation, memoranda of understanding, and scholarship. No language before has spread as fast as English during the twentieth century and it is used extensively in most international activities. The growth of the technological revolution and the rapid changes in all sectors of society that has occurred in the global world has overcome many difficulties and English has become the means of international expansion and development.

Halonen \& Mkapa (2004) argued that the movement towards globalization initiated by the United Nations Organization had spread English around the world. Moreover, the advancement of the revolution of multimodal technology in the modern world, supported by more open migration policies, had created a world that was more interconnected and
interdependent in economic and trade relations among countries, in international relations in the quest of world peace, and in diplomatic affairs. One obvious way to respond to the globalization movement was to establish a common language. English had become the common language most widely learnt and used. In today's society, English "encompasses the globe" (Hasman 2000, p. 3), simply because English was considered as a global language spoken by people all over the world from different cultures as either their traditional native language, their second national language, or learned as a foreign language. This indicates that as the need for using English increases, it is not surprising that a very large number of people in every continent of the world are today learning to speak English.

As the most popular language in the world, it was estimated that 400 million people spoke English, in its various forms, as a first language, while three billion people in some parts of the world spoke English as a second or foreign language (Demont-Heinrich, 2008). By the year 2040, this number was estimated to increase to three billion functional users of English, or above 40 per cent of the world's projected population at that time (Burleigh, 2004; Graddol, 2006). What had to be questioned was who these speakers were. Interestingly, since the numbers of English users who were non-native speakers were larger than those who spoke it as their mother tongue, from the global perspective, the position of English as the universally shared language of today and the future was said to be beyond dispute (Cenoz \& Jessner, 2000; Crystal, 1997; Dovring, 1997). Crystal (1997) had estimated that in the 1990s, non-native speakers who were English users were around 80 per cent of the total users of English. However, this was not to contend that nearly everyone currently spoke English fluently although in some parts of the world, in South-east Asia for instance, a very large number of people were strongly motivated to learn English. They were making great efforts to master the language. This was because they argued that it would put them in direct contact with more people than any other language would or could.

## What is a Global Language?

English was being referred to as a 'global language' when "it develops a special role that is recognized in every country" (Crystal, 1997, p. 3). The status of English was as the traditional language of some countries such as the United States, the United Kingdom, Canada, Australia, New Zealand as well as South Africa, and several Caribbean countries, and a sprinkling of other small territories. However, the status of English as a mother tongue would not give English status as a global language.
Crystal argued that
To achieve such a status, a language has to be taken up by other countries around the world. They must decide to give it a special place within their communities, even though they have few (or no) mothertongue speakers. (Crystal, 1997, p.3)

Therefore, there were two ways to achieve status as a global language. First, the official appointment of a language as a second language in certain countries could give that language global status. Fortunately, this official status in some countries was occupied by English. Such countries as Ghana, Nigeria, Singapore, India, and Vanuatu gave English special status to be used as an official language in government, as a medium of instruction in education, as a language to be used in law courts, and the language that was used in business and commerce. The special status given to English in these countries could not be separated from their history. In these countries where English was formerly the language of colonialization it continued to be spoken by their communities after their independence was gained. In these countries English was perceived and spoken of as a second language to complement a person's indigenous language. Thus a person's mother tongue remained in operation in these countries as that person's first and native language.

Second, a language could also be given priority in a country's national curriculum as a foreign language. In such a country, English had no official status. It was a language that could be learnt when children entered schools. This was also the language for adults who learnt it for specific purposes in their early working life. Russian had a high status for many years among the countries of the former Soviet Union. Mandarin had become a foreign language to be taught and learnt in South East Asia. However, English was the
major foreign language in more than 100 countries, such as Indonesia, Japan, China, Korea, Russia, Germany, Sweden, Spain, Egypt, and Brazil. It often happened that the acceptance of English displaced another foreign language. For instance, in Sweden where German had been taught as the prime foreign language, it was replaced by English in 1945 at the end of the Second World War. It was also reported that nowadays, in China the English language replaced the place of Russian as the dominant foreign language during the cold war (Harumi, 2002).

## Reasons Why English has Become the Global Language

There has been little written about why English is becoming the global language with a huge number of people speaking it. However, looking back as to whom the native speakers of English are, it is argued that there are strong political and financial reasons as to why English is becoming the global language. Crystal $(1997$; 2009) said that the political, military, technological, cultural forces and economic powers of the people who spoke it provided the main reason for this language becoming an international language. Furthermore, the expansion of British colonial power, which peaked towards the end of the nineteenth century, and during the early twentieth century and the emergence of the United States as the world's leading economic power throughout the latter half of the twentieth century provided two key reasons (Yang, 2001). Moreover, it could be argued that the verbal power of the language was also reflected in the spread of the language across the world. This was strengthened by arguments that there had never before been a language that had been spoken by more people as a second or a foreign language than as a first language (Crystal, 1997) and this led to the present global spread and use of English (Streven, 1982; Quirk and Widdowson, 1985; Kachru, 1986; Smith, 1983, 1992).

A strong political and economic power-base was perhaps the main reason why a language could became an international medium of communication. Without a strong power-base, it was difficult for the language to progress as an international language. For example, in the past Latin was the international language during the life of the Roman Empire. It was not because of the huge number of people who spoke it, but the power of the Roman military forces gave Latin the opportunity to become an international language (Crystal,
1997). However, when the power of the Roman military forces was no longer strong, Latin still had the power as an international language for more than a millennium because of the great influence of Roman Catholicism and its influence in legal matters. Again power was the reason for this language becoming an international language, although not necessarily a global language because the world was still divided, and with many parts still unexplored.

However, there are also some reasons as to why a language gains an international status successfully. Some languages such as Arabic, French, Greek, and Hebrew including English can be argued to have aesthetic qualities, being easier to understand since less difference between the use of masculine, feminine or neuter gender, and having greater clarity of expression and literary power, as well as there being a religious reason for the language becoming an international language. Huda (2000, p. 68) argued that there were five factors that gave English status internationally:
(a) the linguistic properties of English;
(b) the huge number of people who spoke it;
(c) the wide and rapid spread of English all over the world;
(d) its importance and status in international diplomatic, politics, trade relation with other countries, economic, business and commerce, and science and technology dissemination; and
(e) the use of English in countries that had a strong power politically, economically, and culturally.

However, Crystal (1997, p. 8) argued that "such argument is misconceived" and "are the result of unthinking chauvinism or naïve linguistic thinking" (Crystal, 2003b, p. 106). Moreover, Crystal (1997, p. 8) explained that

Latin was once a major international language, despite its inflectional endings and gender differences. French, too, has been such a language, despite its nouns being masculine or feminine, and so - at different times and places - have the heavily inflected Greek, Arabic, Spanish, and Russian. Ease of learning has nothing to do with it. Children of all cultures learn to talk over more or less the same period of time, regardless of the differences in the grammar of their languages. And as for the notion that English has 'no grammar'- a claim that is risible to anyone who has ever had to learn it as a foreign language - the point can be dismissed by a glance at any of the large twentieth-century reference grammars. The Comprehensive grammar of the English language, for example, contains 1,800 pages and some 3,500 points requiring grammatical expansion.

This argument emphasizes that a language does not become a global language because of its linguistic features, less gender differences, easier to understand, literary power in the past, religious standing, or its size of vocabulary. These may be factors that motivate people to learn a language. Once they are motivated, they put a lot of effort into learning it. People are greatly encouraged to do so, and feel proud when they are able to master the use of the language.

Crystal (1997, p. 8) argued that none of these factors "can ensure a language's world spread". As he said

Indeed, such factors cannot even guarantee survival as a living languageas is clear from the case of Latin, learned today as a classical language by only a scholarly and religious few. Correspondingly, inconvenient structural properties (such as awkward spelling) do not stop a language achieving international status either. (Crystal, 1997, p. 8)

The emergence of English as a global language has a considerable impact on educational policies and practices not only for Indonesia but also for many other countries in the Asia-Pacific region. Further information about these countries is given in Appendix 2.

## The Importance of Evaluation

China, like Indonesia and many other non-English speaking countries in Asia has recognized the importance of English learning and teaching at the university level. The English language has become more than a foreign language, it has been said to have "become a passport to the international world" (Yumei, 2010, p. 226). Of particular importance is the role of evaluation with a placement test at the start of classes, a progression test, and a graduation test at the completion of a course, with an emphases placed on formative assessment as well as summative assessment. Furthermore, not only are there both written and oral testing in most-English classes, but also 20 per cent of "every credit students are awarded in English comprises oral performance."

## Summary

The English language is accepted as having a prestigious status as a World language. Its status in many countries as a foreign and the second language leads English to emerge as the global language. With the status of English as the global language, whether people like it or not, it is necessary for people to learn English if they want to have the advantages of living in a global world.

English is not only the language to be able to claim proficiency when looking for a job. Although English is studied worldwide for three socio-historical reasons, namely, as a traditional national language, as the former British-colonial language, and as a tool of international communication, there is a broader reason as to why it is commonly necessary to obtain proficiency in the use of the English language. Today English is the language to access economic affairs, scientific knowledge, further education and the findings of scientific research that is necessary to access through Information and Communication Technologies (ICT). Moreover, English is undoubtedly the most widely used language across the countries of the World.

In recognition of the great role of English in modern life, the Government of Indonesia requires that the learning of English is compulsory for Indonesian people. The importance of learning English by all Indonesian people is stipulated in the Government Regulations. Moreover, English is placed in the national curriculum as a compulsory subject to be taught and learnt at school. Detailed information about the education system in Indonesia alongside the current reforms in education and their impact on the teaching and learning of English in Indonesia are discussed in the next chapter.

# CHAPTER 3 EDUCATIONAL REFORM IN INDONESIA: AUTONOMY AND ITS IMPACT 

## Educational Reform in Indonesia: Facing the Global Age and Autonomy

It is stated in the 1989 Education Act Article 4 that the objective of Indonesian National Education is

Developing pupils' potential so that they become human beings who believe in and are pious to one and only God, possess good character and exalted morality, are sound in body and mind, hardworking, autonomous, aesthetical, knowledgeable, creative, productive, expert/skilled, and democratic, possess a vision of excellence, maintain harmony with environment, and possess a sense of social responsibility and national spirit for the purposes of developing the intellectual life of the nation.

However, this objective can only be achieved if education programs are assessed, redesigned, planned, implemented, and evaluated, and this is not an easy task. It involves consultation and discussion and requires successive major changes to the education system. In other words, the goal of National Education can only be achieved with the support of reform taking place in all of the elements of Indonesia's education system. Consequently, substantial reform in the national education system is required.

Kuswandono, Gandana, Rohani, and Dzulfikar (2011, p. 2) argued that "education, as it is generally acknowledged, has been a powerful tool for empowerment, playing a significant role in the process of nation building and national development". Therefore, since the world is facing unprecedented challenges because of the varied impact of globalization and the ICT revolution, the Government of Indonesia made political commitments at the World Education Forum (April 2000), along with other governments and organizations, towards achieving 'basic education for all'. In this broader context, national level discussions were held for developing a new vision of education, as part of the national program of change and development in Indonesia, which emphasized the implementation of the principles of democracy, autonomy, decentralization, and public
accountability. The reforms to the education system gave prominence to enhancing performance within the framework of an equitable distribution of educational opportunities. The reform process has had a fundamental impact on the national education system and its mission to meet various challenges in a global age.

Guided by the mission of education and educational strategies, the Republic of Indonesia enacted a new Law on the National Education System in July 2003, resulting from nation-wide consultations. The Law had its foundations in the 1945 Constitution of Indonesia, Article 31, Section (1), which stated that each and every citizen would have a fundamental right to education. The Law created a legal framework for the major educational goals, policies and plans. The key targets included expansion and greater equity, the improvement of quality and relevance, and the implementation of autonomy in higher education.

## Autonomy in Higher Education in Indonesia

The fall of The New Order under the regime of Suharto Government (the former President of the Republic of Indonesia) provided the Directorate General of Higher Education (DIKTI) with a broader opportunity to speed up the agenda for reform of higher education management in terms of campus autonomy. However, this change did not take place smoothly because the influence of the Government's previous programs that involved a centralistic paradigm was still strong. Indonesia had obtained a great amount of foreign money from donor agencies, in particular the International Monetary Fund (IMF). As a foreign donor, the IMF tended to utilize the reformation euphoria following the fall of the Suharto regime and the instability of Indonesia's economic system by implementing new programs involving deregulation and privatization (Sulistiyono, 2007). The privatization program was also implemented in the monopolistic state-owned companies, including education, banking, transportation, telecommunication, electricity, mining and many more.

Increasingly, a large number of reputable universities in Indonesia are now becoming autonomous universities. The spirit of campus autonomy is in line with IMF programs which are introduced with the spirit of accountability and transparency. The Directorate

General of Higher Education is required to carry out reform in education in which institutional autonomy and accountability become strategic issues. For these purposes, the Government issued the legal basis of higher education in the form of Peraturan Pemerintah (PP)/ Government Regulation No. 61/ 1999 concerning Perguruan Tinggi Badan Hukum Milik Negara (PT-BHMN)/ Higher Education of State-owned Legal Entity.

Since this investigation was conducted within the context of higher education, it was of considerable importance to discuss autonomy in education at the university level. Within a highly pluralistic country and diverse nation, it is not easy for the Indonesian Government to apply a universal policy to every institution. Uniformity under the central government is seen as an inappropriate solution to a heterogeneous system. Although it seems to work for a short period, reality shows that it does not work for longer periods. More problems emerge. The Indonesian Government is not able to manage centrally a complex system that exists in a highly pluralistic country. This is exemplified by the emergence of some illegal unqualified educational providers who publish illegal certificates for their graduates as well as their failure to be accountable in the execution of the educational process. Therefore, a shifting role in the education system from the centralized government to a decentralized structure by giving greater autonomy to each institution is considered to be the best approach for managing such a highly complex higher education system. However, this centralistic approach is found to be unable to face the many challenges that exist in a diverse nation.

In implementing autonomy, the role of the central government should also shift from "regulating into more empowering, enabling and facilitating" system (Brodjonegoro, 2003, p. 4). However, the government's intervention in terms of resource allocation and in other ways within the context of the national higher education system was still necessary. Nevertheless, autonomy had the consequence that each institution had to be responsible for its own accountability. Nevertheless, a comprehensive and consistent policy was needed in order to provide autonomy and accountability. As Brodjonegoro (2003, p. 4) argued

Each relevant aspect has to be adjusted following the policy shift, i.e. funding policy, personnel policy, governance, and quality assurance system.

At the end of 2008 (18 December 2008), further reforms in the formal education system were officially announced in Indonesia. The Educational Legal Institution Law (UU BHP) and the Law on the National Education System that were proposed by the Government of the Republic of Indonesia was passed and signed by the House of Representatives. The Government dictated that the educational process should be managed autonomously. Consequently, Law No 9/2009 of the Educational Legal Institution (UU BHP or Undang-Undang Badan Hukum Pendidikan) was released by the Government.

These reforms to the education system were intended to renew the vision, mission and strategy of national education. National education had a vision for bringing into being the education system as a strong and respected social institution to empower all citizens of Indonesia to become enlightened human beings who were able to keep abreast of the challenges of the time. Maipita (2008) argued that as a result, there were three important changes to higher education that involved academic authority, educational management, and funding.

## Autonomy in Academic Affairs, Authority Management, and Funding

Academic authority meant that higher education had the authority to establish curricula with the aim of making curricula that were relevant to market needs and societal demands. Higher education also had the authority to appoint professors and award doctoral degrees, and recruit new academic and administrative staff without having to obtain permission from the Directorate General of Higher Education (DIKTI). However, in order to maintain communication with the continued existence of DIKTI, universities had to inform the Directorate General of Higher Education about what they had done. In the implementation of education and the development of science, a higher educational institution was entitled to pursue freely intellectual activities with academic freedom, and greater autonomy (Maipita, 2008).

Management authority meant that higher educational institutions had the autonomy to manage themselves as a centre of higher education, to undertake scientific research which
was able to produce more patents and income generating technology, and to provide services to the community. The management authority included operational management, human resource management, and marketing management, while the funding authority meant that higher education had the autonomy to raise funds from the community and manage its own financial resources based on the principles of public accountability. Therefore, with such authority it was hoped that higher education as a driving force was able to participate actively in supporting national development (Maipita, 2008).

However, it is worth noting that the concepts of autonomy at the primary and secondary school stages and at the tertiary stage are different, since there are two levels of autonomy. The concept of autonomy at the primary and secondary school stages means that the central government gives full authority to the local governments to manage schools in their own systems, raising funding and managing their own financial resources, providing structure and infrastructure, as well as counselling services, and the recruitment of staff. Moreover, the concept of autonomy at the tertiary stage in universities involves authority in terms of academic management and human capital, funding resources, and staff recruitment, under the coordination of the Directorate General of Higher Education. In an era of national and global change, educational reform is both necessary and inevitable at both school and higher educational levels.

## Law No 9/2009 and the Educational Legal Institutions (UU BHP)

The purpose of Law No 9/2009 is basically to implement autonomy in the educational system, and in particular, in higher education in terms of financial autonomy. The world is changing rapidly. Moreover, it is widely acknowledged that the impact of globalization and the advancement of Information and Communication Technologies (ICT) are very marked in education, particularly in its effects on the changing role of higher education in Indonesia. Brodjonegoro (2003, p. 1) argued that there had been a shifting role in higher education institutions from traditional learning institutions to creators of knowledge. This included a change from random planning to strategic planning, and a movement from comparative to competitive approaches. Moreover, he also commented that

In meeting the challenges of globalization, Indonesian higher education development is implemented using the new paradigm where institutional
autonomy and accountability become the strategic issue. It is expected that by 2010 Indonesia will have a competitive leverage due to the existence of highly reputable higher education institutions, and we believe that a strong higher education program will lead to a nation's competitiveness. (Brodjonegoro, 2003, p. 1)

However, responses to the emergence of the Law No 9/2009 were varied and full of controversy. Some groups in Indonesian society highly criticised the Law. It had been argued that the privatization of public universities would affect the responsibility of students (or their parents) for their education in public universities (Fahmi, 2007). They would worry if they were required to pay expensive charges for their tuition fees. Moreover, it was argued that educational autonomy was a form of educational commercialization and the Indonesian Government would relingiush its responsibility as the provider of education (Malik \& Islahuddin, 2010).

However, the Government claimed that this argument was not true. The Government still had responsibility for 50 per cent of operational cost for higher education, while only 33 per cent was considered to be student responsibility. The university itself had the responsibility to provide 17 per cent of its own operational costs. This approach was taken because the Government made a decision that involved making education at the primary and secondary stages free. Unfortunately, these arguments were not able to silence some criticisms. This was because real life showed that there were still many people, in particular from a low socio-economic background, who were not able to access higher education. Moreover, if the Government required universities to find 17 per cent of operational costs to satisfy their needs, it was argued that this would pass on these changes to students who already had the obligation of providing 33 per cent of the operational costs of higher education.

Some groups in Indonesian society from political parties, industry, academics, educational practitioners, and the students themselves who disagreed with the emergence of the Law put a strong case to the Constitutional Court to cancel the Law. After a long debate between those who disagreed and agreed with the Law, the Constitutional Court on March 31, 2010 finally made the decision to cancel the Law No 9/2009. The Head of the Constitutional Court, Mohammad Mahfud (Kompas, 2010) stated that the Law No

9/2009 about the Educational Legal Entity Bill contradicted to 1945 Constitution of Indonesia. Since then the Law is no longer in operation.

On the other hand, this decision disappointed many university Rectors who had already prepared their universities for becoming Higher Education State-owned Legal Entities (PT-BHMN or Perguruan Tinggi Badan Hukum Milik Negara). Between 2004 and 2005 some state universities in Indonesia also made preparation to become an autonomous education provider. These universities spent a lot of energy, time, and money in making their preparations. They also argued that the purpose of establishing the new legal entity of a university was appropriate, and was not for commercializing the education sector. The availability of Law No 9/2009 was introduced in order to restrict the funding from society. Therefore, it was argued to be appropriate for society to have the responsibility of providing 33 per cent of higher educational costs since it was difficult to give the government full responsibility to finance education. A role for the society was required.

It has been reported by the Directorate General of Higher Education that by June 2010 there would be seven State Universities, such as Gajah Mada University (UGM), University of Indonesian (UI), Bogor Institute of Agriculture (IPB), Bandung Institute of Technology (ITB), North Sumatra University (USU), Indonesia Education University (UPI), and Airlangga University (Unair), which would have full status as state-owned legal entity universities (PT BHMN). Moreover, there were another 18 universities which would have the status of a Public Service Body (BLU) by August, 2010. However, since the cancellation of the Law No 9/2009 (UU BHP) by the Constitutional Court on March 31, 2010, these conditions would be re-examined by the Government, and an appropriate law would be prepared as an exchange law.

However, the cancellation of the Law was not meant to discourage some state universities from becoming a state-owned legal entity (PT BHMN) since this could be done by authorizing an appropriate Government Regulation. The Ministry of National Education stated that those universities were under transition. Consultation and discussion were continuously conducted among the Government, the Directorate General of Higher Education, and the PT BHMN universities to solve the issues arising from the
cancellation of UU BHP. The Ministry of National Education, Nuh (2010) said that new regulations would be prepared to meet the needs of universities under the umbrella of PT BHMN in order that they were still able to operate.

## The Implications of the Cancellation of the Law No 9/2009

The cancellation of UU BHP for some universities under the status of the state-owned legal entity (PT BHMN) gave rise to many different responses. The cancellation of the law was similar to forcing these universities to go back to the New Order when this was an order that was bureaucratic and centralistic. Meanwhile, society in general and some political parties as well as students were satisfied with this cancellation since they thought that the Government was still in charge of education. However, an educational observer, Prasojo (2010) argued that the cancellation of UU BHP had two implications that were normative and strategic.

## Normative Implications

It took ten years for the universities to prepare to become a state legal entity or corporate body (PT BHMN). This was not a short time and there were many decisions that were required. The way that the universities operated became more transparent and accountable and changes in the research and teaching traditions of the lecturers were issues that needed to be considered.

The cancellation of UU BHP made the PT BHMN universities lose their legal identity because there were no longer legal laws that would support them. Nevertheless, the universities were still expected to remain in operation. Therefore, there were three aspects that needed to be taken into consideration by the Government. These aspects were governance, financial problems, and human resources (Prasojo, 2010).

First, from the governance aspect, some decisions that were made by PT BHMN universities did not have legal support. Second, from the financial aspect, PT BHMN universities were required to follow some financial rules that were determined by the central government. All income obtained by these universities had to be sent to the central government. At the same time, these universities had the right to gain financial
assistance from the central government. Finally, the existence of administrative staff and academic staff who had already been recruited by the PT BHMN universities needed to be considered. These staff obtained status as staff of PT BHMN universities and these universities also had the authority for recruiting their own staff. However, since PT BHMN universities did not have to follow legal requirements the status of their staff was questioned. The loss of legal status of these staff led to their loss of motivation, and it was the responsibility of the Government to solve these issues.

## Strategic Implications

The cancellation of UU BHP by the Constitutional Court did not mean that the Government would turn the universities into bureaucratic-legalistic institutions (Prasojo, 2010) which would inhibit innovation and creativity as well as the advancement of scientific knowledge at the university level. It was now time for universities in Indonesia to compete internationally. Thus, the Government needed to provide financial support for universities to enhance their research traditions, their teaching, and their community services without forcing the universities to lose their autonomy.

## The Emergence of Law No 12/2012: UU PT

After long and heated debates concerning the Law No 9/2009 about The Education Legal Institution (UU BHP), in 12 August 2012, the President of the Republic of Indonesia issued The Law No 12/2012 on Higher Education. The Law No 12/2012 (UU PT) is regarded as a replacement of Law No 9/2009 (UU BHP). Since then the PT BHMN universities (PT Badan Hukum Milik Negara) which are now in transition have the legal support to operate strongly, and have a new name as Perguruan Tinggi Badan Hukum. More detailed information about this Law is presented in Appendix 3.1A.

## Higher Education in Indonesia

Indonesia has 83 state universities that differ in quality. Seven out of the 83 have the status of a corporate body (PT BHMN). These universities are identified as leading universities. Twenty out of the 83 universities are identified as having the status as a

General Services Body (UU BLU). The number of private universities in Indonesia is approximately 3000 . The differences in quality among these private universities are very great since there are less than 50 per cent private universities that are considered to be healthy. Moreover, the quality of the lecturering in terms of pedagogical content knowledge and social as well as professional competences, and the number of the lecturers' international publications need to be considered. Furthermore, from among the many universities, both state and private, in Indonesia, not one was located in the world top 100 universities in 2012. According to QS (Nuh, 2012) Top Universities, the University of Indonesia had the position of 217. The Institute of Technology Bandung was placed number 342, and Gajah Mada University was in position 451. However, these three universities were included in the best 100 universities in Asia. Webometrics (Nuh, 2012) reported that there were 29 universities in Indonesia included in the best 100 universities in South East Asia (ASEAN), and the University of Indonesia held the position of sixth. The formation of UU PT was intended to strengthen all universities in Indonesia that had many different conditions. This required that the universities were made autonomous. The process involved reinforcement, empowerment, and synergy. Although the universities had been given autonomy in some aspects, control from the Government was still important in order that the objectives of national education could be achieved. Thus, UU PT is expected to be able to enhance the quality of higher education in Indonesia, and in particular, in the universities.

## Indonesia and its Education System

According to the Indonesian Education Act Number 20, 2003, the levels of education in the school system consisted of basic education, middle or secondary education, and higher education. Basic education consisted of six years of elementary schooling and three years of junior secondary schooling. This was declared to provide nine years of Compulsory Education by the President of the Republic of Indonesia on May 2, 1994. Middle or secondary education consisted of three years of schooling in General Senior Secondary Schools or Vocational Senior Secondary Schools.

Figure 3.1 shows the organizational structure of the education system in Indonesia. It can be seen in Figure 3.1 that the school system is divided into two streams, namely the Islamic stream under the Ministry of Religious Affairs (public and private), and the secular stream under the Ministry of National Education (public and private).

(adapted from Mohandas, 2004)

## Figure 3.1 Education System in Indonesia

It can be seen from Figure 3.1 that at the level of Higher Education, the programs were divided into the following areas:
(a) D1 Program: a one-year Diploma program;
(b) D2 Program: a two-year Diploma program;
(c) D3 Program: a three-year Diploma program;
(d) D4 Program: a four-year Diploma program;
(e) S1 Program (Strata 1): a four-year degree program of the first strata or equivalent to a Bachelor Degree;
(f) Islamic S1 Program (Strata 1): a four-year degree program of the first strata at Islamic Institutes (IAIN), equivalent to a Bachelor Degree;
(g) Specialist 1 Program: a two-year program at the Master levels for professional education;
(h) S2 Program (Strata 2): a two year degree program of the second strata or equivalent to a Master Degree;
(i) Islamic S2 Program (Strata 2): a two-year degree program of the second strata at Islamic Institutes (IAIN), equivalent to a Master Degree;
(j) Specialist 2 Program: a three-year program at the doctoral level for professional education;
(k) S3 Program (Strata 3): a three-year degree program of the third strata or equivalent to a Doctoral Degree; and
(1) Islamic S3 Program: a three-year degree program of the third strata at Islamic Institutes (IAIN), or equivalent to a Doctoral Degree.

Participation in the preschool at the lowest level is not a requirement for entering to the elementary school stage. However, the Government makes every effort to encourage parents to send their children to a preschool before entering an elementary school.

## Reform in Financing Higher Education in Indonesia

Educational reform is guided by reforms in governance from centralization to decentralization, educational management, and sometimes involves cuts to educational budgets. In the past, higher education in Indonesia, in particular, the wealthier state universities traditionally received public subsidization. The Central Government had the responsibility to provide funding for higher education. Thus, the operation of higher education was largely very much dependent on funding from the Indonesian Government. However, since the making of policy was dominated by market orientation, public subsidization of higher education has increasingly been questioned (Varghese, 2003).

Moreover, it is important to note that the traditional pattern of funding in Indonesian higher education has recently changed. Higher education in Indonesia, where public subsidization and state funding had formerly dominated, moved towards reforms involving diverse funding sources, through a progressive shift from single-source state funding to cost sharing, income generating activities, and the involvement of the private sector such as business companies and industries, for the further growth and expansion of
education. Educational autonomy influenced the way in which higher education looked for and created income. Previous generations had enjoyed the subsidization of higher education for a long period of time.
The shift in pattern of funding in higher education occurred because the subsidization was viewed as

Benefiting students from relatively higher socio-economic status and hence subsidies to higher education were profiting a particular elite section of society. (Varghese, 2003, p. 830)

Furthermore, this was also viewed as providing excellent opportunities for the educational sector to involve the private sector in supporting the development of education in Indonesia. Thus, as the Indonesian Government reduced subsidization to higher education, this led to "transferring the incidence and burden to the households" (Varghese, 2003, p. 830).

This change raises problems for students from lower socio-economic groups, since it influences how much must be paid in tuition fees to a university. Both students from higher socio-economic groups and lower socio-economic groups both have to pay high fees if they want to attend a university. Consequently, not all students have the opportunity to attend a university, because some cannot afford the expensive fees that have to be paid. Although many Indonesian universities are worried about whether or not they are able to operate effectively owing to this change in policy, they have to be realistic and recognize that change cannot be avoided.

## Income Generating Activities of a University

Because of the reduction in funding from the Indonesian Government to the State Universities, many universities in Indonesia have adopted strategies for generating their own incomes. This has been achieved in different ways. Universities in Indonesia have made many attempts at generating new sources of income. Some universities have rented spaces for food stalls, bank operations, internet rentals, a pharmacy store, photocopying services, wedding parties, and guest rooms. These facilities have been offered for rental not only to staff but also to the wider community. Moreover, some universities have
established linkages with other universities and industries, have introduced consultancy services, and have established market directed courses.

Some universities in Indonesia have also established networking with a number of large companies in order to provide consultancy services and to collaborate in a number of research projects. Some institutions have the excellent idea of establishing a university Alumni Bond. This has also been a good source of income for them. The University Alumni Bond has been established as a strong organization that has supported a university in terms of financial donations.

Universities have also started to collaborate with the police department as the coordinator of its staff and students for obtaining driving licences. As a regular coordinator, a university has supplied to police departments a mass register of those students and staff who wanted to have a driving licence, and this activity has provided a good source of income for the university.

Like many other universities in developed countries, Indonesia tried hard to attract foreign students since they were a source of income for the universities. There have been some students from Australia, Laos, Cambodia, France, Sudan, Burma, Japan, Malaysia, and Papua New Guinea (PNG) who have been enrolled in some Indonesian universities, such as University of Indonesia, Institute of Technology Sepuluh Nopember (ITS), University of Diponegoro, and Gajah Mada University. In some universities in Indonesia the proportion of foreign students has been substantial, although the total number of foreign student enrolled across Indonesia as a whole has not been great.

In addition, State Universities in Indonesia in collaboration with the Directorate General of Higher Education have sent a large number of academic staff to continue their studies in other countries, and the Indonesian Government has provided a large number of scholarships.

## The Relationships between Educational Reform, Globalization, and the Learning of English

One of the purposes of educational reform is to respond to the demands to meet a variety of challenges arising in a global market. The response to this occurs in a variety of forms. One of the forms is that the Indonesian Government continues to develop its human capital by sending a large number of academic staff to study in other countries in order to return to Indonesia as highly qualified teachers who are equipped with knowledge and good communication skills, particularly, in English. As a developing country, Indonesia puts a great emphasis on the importance of English as the international language that is used in a global economy.

There is a growing need for a critical examination of the impact of globalization on the educational process, in general, and on English language teaching and learning in particular. This emerging pressure in a global age has influenced the teaching and learning of English as a Foreign Language (EFL). Across the world, English has become the major foreign language in the countries surrounding Indonesia. Increasingly, there is awareness that educational reform, as a result of global change, cannot be separated from the teaching of the English language, since there is a strong interconnection between them. It is not difficult to see evidence in modern life that educational reform and the English language are closely interrelated.

Real life shows that international business and scholarly learning are largely undertaken by means of English as the language of communication. This is primarily because international business and scholarly work are often carried out more between non-native speakers than between native speakers of English. If they communicate using only their own language, both international business and study can never occur. Consequently, there seems to be consensus among business and research workers to use a language that they are capable of understanding. Thus English is now widely used as the international language to bridge communication between people from different cultures, different countries, and different fields of endeavour and research activity.

There are a few languages that have some recognition from the United Nations Organizations as international languages such as French, Germany, Spanish, Chinese, and Arabic. However, as is argued in the previous chapter there is no doubt that English is the global language that has spread most rapidly around the world in recent decades and millions of people are now able to speak, read and write in the English language. Thus the English language is now able to gain the highest position in international activities, such as trade, business, political negotiation, and scholarship. (lso see Chapter 2).

## Educational Reform and the Teaching of English in Higher Education

There is also need for a critical examination of the impact of educational reform on the teaching of English in higher education. The Teaching of English as a Foreign Language in Indonesia (TEFLIN) takes place in the context of a national education system. Since it is identified as a system, what happens in one system, such as the political system, can have an impact in another system, such as the education system. The Teaching of English as a Foreign Language (TEFLIN) is an important part of the national education system. What happens in the education system certainly has an influence and requires changes in the teaching of English in both schools and universities as well as raising the teachers' or lecturers' competence.

## General Trends of English Language Teaching in Indonesia

This section discusses general trends of the development of English language usage in Indonesia. These trends can be best described by exploring the historical context of English as the first foreign language in Indonesia and the function and status of English language learning in Indonesia.

## English is the First Foreign Language in Indonesia: Historical Context

There is a long history behind why English was chosen as a foreign language in Indonesia. Before Indonesia achieved its independence from the Netherlands, Dutch was the most widely used foreign language both in schools and in daily life because Dutch
was used as a medium of communication at that time since Dutch was the language of the colonialists and colonialism (Darjowidjojo, 2000). However, only a very limited numbers of schools that taught the Dutch language were available, and these could only be accessed by a specifically selected group of people. These were people who had a close relationship with the Dutch administrators and businessmen.

When the Netherlands occupied Indonesia, English was also taught as a foreign language in some schools, but English was never taught to be used as a means of general communication (Lauder, 2008). Therefore, since Dutch was considered as the language of the colonialists, it did not have the international status that English did. After the cessation of Dutch control and after Indonesian's political system was relatively stable, the Indonesian Government eventually made the decision of choosing English, and not Dutch, as the first and major foreign language to be taught in schools and universities (Dardjowidjojo, 2000; Nur, 2003). Similarly, in Japan and Korea 'English' became synonymous with the term 'the foreign language' (Oishi, 1990; Pae, 2008). It seems that successive Indonesian Governments had already considered the potential use of English extensively for economic growth and for advancing science and technology. Moreover, several neighbouring countries such as Malaysia, Singapore, and the Philippines, and Australia use English either as a second language in some of those countries, and the first language in the case of Australia. The decision for mandating English as the first foreign language, and not as a second language, was because most Indonesian people were already bilingual with Bahasa Indonesia (Indonesian language) as their national language, and the second language for people since a vernacular language was their mother tongue (home language or first language) (Darjowidjojo, 2000). Moreover, Darjowidjojo (2000) argued that Indonesian children at an individual level in their regional areas mostly learned their regional vernacular language as their mother tongue before their learned Bahasa Indonesia. Today most children in the regional areas only learn Bahasa Indonesia when they enter school. However, many children who live in some big cities in Indonesia learn Bahasa Indonesia as their mother tongue as well as their national language.

At the present time, there are also several foreign languages offered, such as Arabic, German, Mandarin, Japanese, and French both in schools and universities. In particular, Arabic is learned for Koran recitation and for praying, while German, Japanese, Mandarin, and French are learned by people who are going to continue to study or do business in the relevant countries.

The learning of English as a foreign language was first mentioned formally at a conference of teacher trainers in 1955. Wachendorff, the first head of the Central Inspectorate of English Language Instruction in the Ministry of Education, stated that English could never be used as a language for social interaction in Indonesia or even as the second official language, but rather it should be "the first foreign language" (Komaria, 1998, pp. 24-25).

## The Function and Status of the English Language in Indonesian Education in Schools

It is stated in Chapter 1 that English has been recognized as the first foreign language in Indonesia since 1955 (Alisjahbana, 1976; Dardjowidjojo, 2000; Nur, 2003). The English language in Indonesia is not: (a) widely used as a means of general communication in society; (b) is not a language used as the medium of instruction in education; (c) is not the language used in law courts; and (d) is not the official language used in government. However, English is seen as a major foreign language to be taught both in schools and universities (Simatupang, 1999, p. 64) with high priority, and is identified as a compulsory subject to be taught at the secondary school level. Moreover, English is also allowed to be taught at the primary school stage, starting at the Grade 4 level (Komaria, 1998, p. 29). However, there is also the possibility of learning foreign languages other than English (Komaria, 1998, pp. 25-31).

In the 1989 Law, Chapter IX, section 39, verse 3, English is identified as a compulsory subject to be taught and as a part of the basic curriculum. Thus it is stipulated in the Government Regulation Number 28, 1990 that English is to be taught from the first year of Junior High School, but may be taught as early as Primary Grade 4 at the school's discretion. Government Regulation Number 29, unfortunately, does not mention that

English may be taught at the Kindergarten level. In Indonesia, there has been a long debate among educators about the appropriate age to start learning English.

In primary schools, English is now commonly taught, although it was not a compulsory subject before 1994. Only after the 1994 revised curriculum, the Ministry of Education allowed elementary schools to include English as a subject for students of Grades 4, 5, and 6. The emphasis on the teaching of English in the Primary School was on oral communication only. Thus, the order of emphasis on language skills is speaking, listening, reading and writing (Dardjowidjojo, 2000; Nur, 2004). Dardjowidjojo (2000) and Nur (2004) stated that English was taught for only 60 to 90 minutes a week, depending on the resources of each individual school.

Dardjowidjojo (2000) and Nur (2004) also reported that students in junior high school learned English for 136 contact hours each year with each contact hour considered equal to 45 minutes. By the end of the third year, students would have studied English for 408 contact hours on average. Consequently, when these students completed their senior high school education, they would have studied English for more than 800 contact hours. This indicates that English is a very important subject to be learned and used.

As stated in the 1967 Decree, the primary objective of English instruction in secondary schools was to provide well-developed reading skills to facilitate the transfer of science and technology knowledge because around 75 to 90 per cent of scientific and technical textbooks and reference materials were available only in English (Nur, 2004; Lowenberg, 1991). Moreover, the 1989 Law on Education Chapter XI, Section 42, Verse 2, stated that English was allowed to be used as a medium of instruction with the purpose of developing knowledge of a particular subject or learning specific vocational skills.

The initial purpose of teaching English in Indonesia was primarily to develop reading ability for helping students to gain access to information. This was because around 75 to 90 per cent of scientific textbooks and other reference materials were written in English (Nur, 2004; Lowenberg, 1991). Although this was supported by Ministerial Decrees of 1967 and 1994, the Government also provided a place for the language sub-skills with the
order in priority of reading, listening, writing, and speaking formally stated in 1967. This was changed to reading, listening, speaking, and writing in 1994 (Komaria, 1998, p. 3336).

At the university level, students from non-language departments were compulsorily required to take English for one semester and for around 90 minutes a week (Darjowidjojo, 2000). Currently, in universities where there is no English department, English is identified as MKU (General Subject Study). The kind of English taught is 'English for Specific Purposes' (ESP) since the learning of English emphasises reading ability. However, this emphasis is only in theory and not in practice. In practice, the learning of English also involves other skills, such as listening, speaking, and writing. It is difficult to focus on one skill only, for example reading, since the learning of a foreign language is very complex and clearly involves more than one skill.

As a foreign language, English is an important part of Indonesian schooling and is formally included in the national curriculum. English is one of the subjects tested in the national examination at the high school level. English became much more important when it was made a compulsory subject from the secondary school level through to the tertiary level. Other foreign languages like French, Chinese, German, or Japanese, if offered, were identified as elective subjects at school (Renandya, 2000, p. 115-116), and they were taught largely in universities that specialized in language learning.

However, the roles of English as a compulsory subject in secondary education and in tertiary education are very different. English in secondary education is a national compulsory subject in the national curriculum, whereas in universities, English is a local compulsory subject, not a national compulsory subject. A local compulsory subject means that the subject is identified by each individual institution as a compulsory subject in that institution. Each university has the authority to decide which subjects are identified as 'local compulsory' subjects. If a subject is compulsory, students have to enrol in that subject. At the university under survey in this study, English is identified as a local compulsory subject.

## Educational Reform and its Implications for the Teaching and Learning of English

## Implication for Teachers' Competences

The rise of educational reform cannot be separated from the response to changes that are occurring globally. Educational reform certainly has implication for the teaching of English as a foreign language in Indonesia. One of the objectives of educational reform is that it provides greater autonomy to institutions of higher education to manage themselves and enables them to compete in a global setting. High quality staff members in higher education are required. Academic staff are expected to demonstrate that they have satisfied the criteria for meeting various challenges in a global economy. Globalization changes the conditions under which language learning takes place. In order to improve the quality of its people, a country needs to maximize the potential of its human, and social resources. One way to improve the quality of people's lives is to make high quality schooling a necessary goal. Thus all students must receive high quality teaching in order to raise the quality of learning for all people in the country.

Both higher education and school quality are being questioned and it becomes an important issue in Indonesia. This issue of quality is associated with both the societal and market demands. In order to respond proactively to these demands, the university, and its stakeholders must work together to fulfil what society and the market expect from a university. As the main players in the process of teaching and learning, most teachers must be seen to be central to the efforts directed towards students' learning outcomes and achievement. This requires people as teachers to have a high level of competence and commitment to their profession and to their university. The competences include personal competences, professional competences, and social competences.

## Implications for the Development of English in Indonesian Education

Traditionally, as in some Asian countries English language education in Indonesia has been largely taught using the Grammar Translation Method (GTM). The English language has been taught mainly in formal classroom settings with little exposure to the authentic use of English. The Grammar Translation Method has been adopted as the
guiding principle for English language learning and teaching. However, since the introduction of English as a subject in the primary school, and the change in the national curriculum by the Indonesian Government, an emphasis on the communicative use of English in the classroom has received a great deal of attention from teachers of English, researchers, and policy makers.
Thus, it is not surprising that today the English language has a major role to play in Indonesian education since English is a subject that is embedded in the national curriculum from the primary level through to the tertiary level. The emphasis on the English language in Indonesian education can be observed in: (a) foreign language offerings in high schools and universities; (b) new initiatives at the elementary school level; (c) a new initiative in opening bilingual classes in certain schools; (d) the establishment of a pilot International-based School; and (e) a variety of ways suggested for promoting English language usage in schools and other situations.

The English language in Indonesian universities, in particular at a university where there is no English department, is as a compulsory subject. This means that all students have to enrol in it. Although there are some other foreign languages, such as French, German, Chinese, and Japanese that are taught in some Indonesian universities as elective subjects, the scholarly learning of English has a much greater value than the other foreign languages offered.

Since Indonesian students largely learn the English language only as a subject of study, it is of particular interest to arouse greater understanding among the students that learning English is much more than learning a subject of study. Learning English is a necessary requirement for a student in order to be able to work and live in global world. Learning English is not only for passing a test and then graduating from school and from university. It is a vehicle for succeeding in international activities such as trade, research exchange, political activity, attending a conference as well as in business and commerce.

The issue of whether the learning of English as a global language poses a threat to the learning of Bahasa Indonesia as the national language, and in many cases as a second
language is raised and discussed in Appendix 3.2A. It is argued that the role of English as a global language does not challenge the development of a national language.

## Implications for the Indonesian Government Agenda

With respect to the status of the English language across the world, the Indonesian Government has a very positive view of the acceptance of English as a foreign language. In order to raise the level of human capital in Indonesia, in 2007 the Indonesian Government through the Directorate General of Higher Education (DIKTI) provided scholarships for 2,500 lecturers to undertake Master or Doctorate programs in countries such as in Australia, Canada, the United Kingdom or in the United States. Thus the Indonesian Government has spent a substantial amount of money that has been sent from Indonesia to the above countries to cover tuition fees, living expenses, health insurance, and book allowances for students studying overseas. The study of the English language is a requirement for most of them. Although this may seem to be unnecessary; the demand exists for competent users of English and there is no other choice. It is necessary to learn English because it is an instructional language that is used both in academic and nonacademic settings. Fortunately, the Government provided targeted assistance for some students who were not competent to study at an overseas university by sending them to an excellent English language course which was taught by native speakers of the English language. Moreover, some students who did not obtain funding for taking an English language course did not hesitate to spend a substantial amount of their private money in order for them to gain access to an overseas university.

## Implications for Parents' Awareness in Promoting English in Indonesia

Many parents in Indonesia, like many parents in China, have deliberately supported their children to learn the English language. Wealthier families who lived in the cities encouraged their children to take additional English language courses after school although they had to pay expensive fees. There were some English language courses taught in the larger cities in Indonesia that were run either by local people or by Western companies such as the Indonesia Australia Language Foundation (IALF) and English

First (EF). People who lived in large cities in Indonesia had greater opportunities to access such courses more easily than people who lived in smaller towns, since such English language courses were mainly taught in the larger cities. There were many other facilities provided in cities and students were able to gain access to them through the payment of the fees involved. Unfortunately, only relatively few people have been able to gain access to these facilities.

The involvement of parents in promoting the English language in Indonesia also operated through the sending of their children to international schools that used the English language for instruction at certain times of the day. After completing high school, such families were also able to send their children to study overseas to countries, such as Australia, the United Kingdom, the United States, Canada, or Singapore. Some students whose parents could not send their children to study overseas by paying themselves had actively improved their children's English skills by encouraging them to study hard in order to gain financial support for overseas study. Proficiency in English thus became one of the requirements for students to be accepted at an overseas university. However, aspiring students had to work very hard to obtain scholarships offered by overseas institutions.

Parents, in particular, who had the financial resources available, also deliberately supported their children by providing literacy tools at home in order that their children had opportunities to interact with computers, the internet, and an English dictionary either in the electronic or manual book form, as well as English reference books and literary works in English.

## Implications on the Creative Ways of Learning English in Indonesia

Indonesian teachers have tried hard to teach English in a variety of ways. School children and university students in some large cities in Indonesia have been involved actively in some English-based activities, such as an English Writing Contest, an English Speaking Contest, Debating, and acting in an English play.

Some departments in universities have also tried to have 'one English day a week', meaning that on a certain day students and lecturers had to speak English as the medium of instruction and discussion as part of the teaching process. Interestingly, in order to remind students and staff to speak English, on that day a notice was placed around the department by writing 'English Area' and 'English Day' on the walls of the department. The policy to change the medium of instruction in the teaching process from Bahasa Indonesia to English was an important innovation that affected subject lecturers generally. It posed special challenges not only for teachers who had only been trained to teach in the Indonesian language but also those trained in English, whose professional experience largely involved the use of Bahasa Indonesia as the medium of instruction.

Some universities and some schools in Indonesia have provided a Language Laboratory, together with multimedia technology that can be used as a medium for teaching and learning English. Students have the opportunity to listen to a native speaker of English through technology and to watch movies of interest. This idea, unfortunately, is not well developed because of lack of resources, and the knowledge of teaching English through the use of multimedia technology.

Big challenges also occurred for teachers in primary and secondary schools when the Indonesian Government introduced a pilot International Based-School (RSBI; Rintisan Sekolah Berbasis International). Teachers were expected to be able to speak English as the medium of instruction. It was hard for them but the Government continued to provide assistance by establishing inservice or outservice training programs. Moreover, some school principals, along with representatives of the local government authorities had undertaken a study tour in some parts of Australia, such as Melbourne and Adelaide.

One State University in Indonesia, namely Malang State University, promoted English by encouraging lecturers to write papers in English that were published in a national journal with the label 'special edition'. 'Special edition' meant that all articles in the journal were written in English and not in Bahasa Indonesia. This was one way of providing an opportunity for lecturers to write in English. It became a challenge for those who were used to writing papers in Bahasa Indonesia. Even though they were English lecturers,
they needed to understand how to express words in a sentence in good English that made sense to the readers.

The Indonesian Government also encouraged lecturers to present papers at an international conference and to write papers in English for publication in an international journal. Interestingly, the Government provided financial support if they had to pay for their publication, if this was competitive. Some universities in Indonesia in 2012 initiated payment to their lecturers who were successful in publishing their papers in an international, national, or local publication in English. The grant was given to each lecturer who was able to publish in an international journal. Moreover, some universities paid more to the lecturers who used the English language as the medium of instruction in classes than the lecturers who used Bahasa Indonesia as the medium of instruction.

In addition, the Indonesian Government motivated researchers and lecturers to undertake research and report it in the English language. The Government provided substantial grants for the use of this kind of research report. In order to use English as the major means of communication, joint research activities with researchers from other countries or in overseas universities were also encouraged.

Another program for promoting English was introduced in non-formal Islamic Boarding Schools, called Pesantren (Islamic Boarding School). Students and teachers in those institutions were required to speak English on certain days. They made it a rule, that if students did not speak English, they would be fined. They also introduced a program that involved remembering five English words and their meaning in Bahasa Indonesia on each day during a week. It seemed that different institutions had introduced different methods of promoting English in their local environment. Therefore, it was not surprising that the use of English has been mushrooming in such institutions and has continued to grow across the country.

It is becoming increasingly evident that there is a large and growing demand for the learning of the English language in schools and universities throughout Indonesia. This
serves to meet the demand for competence in the use of the English language that contributes to the movement towards globalization across the world.

## Summary

This study is a policy-oriented research investigation. This chapter discusses policy issues concerning substantial reform in the national education system of Indonesia. The reform in education occurs as a result of the varied impact of globalization and the ICT revolution. This leads the Government of Indonesia to commit to changes and development in the national education system and a key target is the implementation of autonomy in higher education. This development in higher education involves autonomy in academic affairs, authority management, and funding.

Globalization has an impact on the educational process in general, and on English language teaching and learning in particular. English has become the major foreign language taught and learnt in Indonesia, and has a prime position in the Indonesian education system because English is a part of the Indonesian national curriculum. In line with the rapid development of technology and globalization, English has a major role to play in Indonesia. English is a language to retrieve information as well as the setting for modern Western technology. It appears that English is much more than a subject for study.

Educational reform in Indonesia has several implications for the teaching and learning of English. There are implications for the competence of teachers, implications for the development of English in Indonesian education, implications for the Indonesian Government agenda, implications for parents' awareness in promoting English in Indonesian homes, and implications for several creative ways of learning English in Indonesia. These creative ways includes the use of multimedia technology to increase the use of English in an Indonesian setting, and an emphasis on the communicative use of English both in the classroom and outside the classroom to balance the use of the Grammar Translation Method. These ideas are developed in the chapter that follows that is concerned with factors that influence English language proficiency.

# CHAPTER 4 <br> FACTORS INFLUENCING ENGLISH LANGUAGE PROFICIENCY 

## Introduction

An aim of this study is to investigate a set of issues involved in the learning and teaching of English as a foreign language at an engineering university in Indonesia. These issues involve factors associated with modes of student selection, student background variables, and the nature of the English courses provided by the University. Therefore, this chapter identifies those factors that influence the performance of university students in English. The chapter mainly focuses on discussing a wide range of factors that have the potential to influence English language learning. Many studies have investigated factors influencing English language learning. However not many of these studies could be found to have been conducted in developing countries (Asian countries), including Indonesia, since the research has largely been undertaken in industrialized, Western countries. Nevertheless, relationships between factors and English language learning found in such countries is of interest for analysing similar relationships in Indonesia and surrounding Asian countries.

Previous research studies have reported that student-level factors such as age, gender, learning situation, prior achievement, and aptitude as well as socio-economic status influenced English language learning. A review of recent studies of these factors would be incomplete without reference to the research on the factors that influenced the success of learning English carried out, in particular, in Indonesia. The combination of information obtained from a scholarly review of previous research findings both in Indonesia and international studies is expected to add to the growing body of knowledge about what is already known from research related to the key issues and help to formulate a conceptual framework for the conduct and analyses in this investigation. Moreover, where appropriate, references to the circumstances and context of developing countries, particularly Indonesia are made.

This review is preceded by a brief discussion of the differences between proficiency, achievement, proficiency tests, achievement tests, and literacy. The differences between competence, ability, and performance are also discussed. A brief explanation about these terms is important because it is necessary that a distinction is made between them.

## Achievement and Proficiency

It is important to understand what achievement and proficiency involve. Spence (1983, p. 12) defined achievement as

Task-oriented behaviour that allows the individual's performance to be evaluated according to some internally or externally imposed criterion that involves the individual in competing with others, or that otherwise involves some standard of excellence.

Backman (1990, p. 16 cited in Nakata, 2010, p. 77) defined language proficiency as
Knowledge, competence, or ability in the use of a language, irrespective of how, where or under what conditions it has been acquired.

Davies, Brown, Elder, Hill, Lumley, and McNamara (1999, p. 153) added that in addition to knowledge or competence, and ability as two main uses of the term 'proficiency', the word 'performance' is another main aspect of the term 'proficiency' that is used.

Stern (1983, p. 10) defined 'proficiency' as
the actual performance of a learner in a given language involving the mastery of (a) the forms, (b) the linguistic, cognitive, affective and sociocultural meanings of those forms, (c) the capacity to use the language with a focus mainly on communication and with minimum attention to form, and (d) creativity in language usage.

Therefore, the interpretation of these definitions is that communicative language competence is comprised of two components; (a) linguistic proficiency, and (b) communicative proficiency.

However, Scaramucci (2000) considered that it was important to emphasize that such a concept of proficiency could not stand by itself since it had to be understood as dependent on other factors (variables), its characteristics and objectives, which also made it relative and variable.

Moreover, he added that
In its technical sense, the concept of language proficiency encompasses levels within which the descriptions of language ability and use fall in order to indicate what and under which circumstances a language user is able to do. In this sense, proficiency takes into account the real aims of using language in social context. (Scaramucci, 2000 cited in Consolo, 2006, p.7)

However, there seems to be some disagreement and different viewpoints or perspectives concerning the concept of language proficiency not only in terminology but also in the theoretical paradigms in use where such concepts have originated. Scaramucci (2000) argued that this diversity was not only caused by the different views of the concept of 'proficiency', but this also was a consequence of different views of language, or of "what it means to know a language" (p. 16). Scaramucci (2000, cited in Consolo, 2006, p. 7) further argued that

Language should be better viewed as a complex system constituted by various aspects (for example, culture, discourse and structure) and not as the result of components that can be easily isolated for teaching or testing purposes.

Therefore, it is suggested that the concept of language proficiency has to be defined in a given context of language learning by taking into account both social variables and educational aims.

Some authors such as Bachman and Savignon (1986) and Bachman (1988) criticized the notion of proficiency as a "unitary language ability" since there was no theory or research that supported this argument. Similarly, Lantolf and Frawley (1988, p. 10) argued that "Proficiency is derived from policy and not from science or empirical inquiry". This argument helps towards a better understanding of the difficulty in defining proficiency.

## Competence, Ability, and Performance

A fundamental distinction has been made between 'competence' and 'performance' (Chomsky, 1965). 'Competence' was the speaker's or the hearer's knowledge of the language, while 'performance' was the actual use of language in concrete situations. Davies et al (1999, p. 143) added that

Performance was the application of one's competence or knowledge of the rules of language to actual communication. The requirement of 'real life' or 'authentic' performance in a test reflects the prevailing view that knowing a language includes not only knowledge of the formal features of the language but also knowledge of how to use language appropriately for communicating in particular contexts.

Scaramucci (2000) also made a distinction between the terms 'ability' that is related to the processes of language use, and 'competence' that is related to a state or standard. He argued that the 'linguistic and communicative skills' were better terms to use instead of 'communicative competence'. The notion of 'communicative competence', which meant that adding rules of use of language without which the rules of grammar would be useless, was added by Hymes (1972). Bachman (1990) proposed the terms 'communicative language ability' which comprised two main forms of 'competence': (a) 'linguistic competence', the knowledge of language itself including vocabulary, grammar and structure, pronunciation, and (b) 'pragmatic competence', knowing how to use language involving the use of social knowledge to select language forms to use in different settings to achieve communicative goals or intentions.

In addition, Taylor (1988, p. 16) stated that
if we admit that competence in its restricted sense is still a useful concept (i.e., referring to some kind of 'knowledge' or, better, 'state of knowledge'), then we can draw a distinction between competence and proficiency. ... Performance is then what is done when proficiency is put to use. Competence can be regarded as a static concept, having to do with structure, state, or form, whereas proficiency is essentially a dynamic concept, having to do with process and function. We can thus avoid the difficulties that arise from confusing these things.

However, Savignon (1983, p. 8) stated that
Communicative competence is a 'dynamic' rather than a static concept. It depends on the negotiation of meaning between two or more persons who share to some degree the same symbolic system.

Consolo (2006, p. 9) argued that Savignon's words indicated that
Language users who know the same language (the static sense of competence) can use this language (the dynamic sense of competence) and, as a result, show their proficiency in performance.

If the notions of competence, ability, and performance are related to the notion of proficiency, it is interesting to note that measures of language proficiency have varied in both research and practice. Therefore, in defining 'proficiency', researchers or policy makers have to decide what they are going to measure and what instrument they are going to use to measure the level of student proficiency, since proficiency and competence have to be defined in the context of the nature of the learning of English that takes place. Moreover, the constructs of language proficiency and language competence that have been assessed have ranged from oral to writing skills and from conversational to academic writing (Saunders \& O'brien, 2006). Thus, there is need to assess the macro skills of listening, speaking, reading, and writing, and with some focus on both language knowledge and usage.

## Proficiency Tests and Achievement Tests: They are Different

It is useful to distinguish between tests of language proficiency and achievement tests since they are not the same. Tests of language proficiency have been said to measure what the individuals have learned from an unknown syllabus (Davies, 1977, cited in Denham, 1985, p. 12). Proficiency tests indicated "the overall ability a student has acquired by whatever means (e.g., formal instruction, self-study, travel or study abroad, contact with speakers of the target language)" (Schulz, 1984, p. 196). Alderson, Clapham, and Wall (1995) stated that proficiency tests were developed to measure whether students had managed to reach a certain level of language ability, "but they may fail to fully meet all the specific needs of a certain program or educational institution (Kokham, 2012, p. 292). Consequently, proficiency tests are not related to the specific course content. Achievement tests measure the current language skills that the individuals being tested have learned from a known curriculum (Davies, 1977, cited in Denham, 1985, p. 12). Thus, achievement tests are usually conducted at the end of a course. Davies at al. (1999, p. 154) added that

Some proficiency tests have been standardised for worldwide use, such as the American TOEFL test which is used to measure the English language proficiency of foreign college students who wish to study in the USA; or the British-Australian IELTS test designed for those who wish to study in the UK or Australia.

The differences between 'proficiency' and 'achievement' are clear. Understanding the differences between proficiency and achievement tests helps test designers construct appropriate items that are in line with the goal of the test being constructed. Moreover, this understanding benefits the test-takers since their ability is measured as being based on the type of test itself. Failing to understand these differences, in particular for decision makers, put the test takers in a disadvantaged position.

## Factors that Influence the Development of English Foreign Language Proficiency

Developing English language proficiency within the setting of English as a foreign language is not an easy task. Cummins (1980 cited in Albers, Kenyon, \& Boals, 2009, p. 75) argued that this was because "the acquisition of language proficiency is not a dichotomous process but rather one that develops along a continuum". Moreover, the teachers of English in this setting are non-native speakers of English, and the target language is not spoken in this setting. The emergence of language learning theory namely, the 'Grammar Translation Method' dominate the teaching of English in Asian countries, such as Japan (Gorsuch, 1998; Suzuki, 1999; Matsuura, Chiba \& Hilderbrant, 2000; Rao, 1996), Indonesia (Cahyono \& Widiati, 1996, Alwasilah, 2001), Korea (Vasilopoulos, 2008; Jeong, 2004), Thailand (Allen, 2005) and China (Anderson, 1993; Wenjie, 2009) have used this method for years. Even when the latest teaching methods, namely, Communicative Language Teaching (CLT), is used, some of the characteristics of CLT make it difficult for a non-native-speaking teacher who may not have a high level of English language proficiency in the use of English to teach effectively. Teaching grammar rules and drills (the forms of language) are seen to be much simpler and easier than the use of the target language for non-native-speaking teachers to teach. Therefore, it is not surprising that students are able to achieve higher scores in writing (structure and written expression) since this is what they have been doing in class for a long time when learning English as a foreign language.

Furthermore, Carroll (1963) argued that it took approximately two or three years to develop non-formal or social English proficiency, and it took approximately five to seven years to develop formal or academic English proficiency. Subsequently, Cummins (1984) pointed out that it would take a much longer time for non-native speakers of English to develop the formal or academic language proficiency that was required for teaching English as a foreign language.

It has been consistently argued by social psychologists that individual differences between learners gave rise to differences in learning outcomes. Some people found it easier to learn English, while other people struggled to learn English. Moreover, some learners were more successful in learning a foreign language than other learners. Many factors operated to influence these differences; and why some people did better in foreign language learning than others.

The learning of English as a foreign language was also characterized by the widespread availability of formal classroom instruction. Foreign language learning was a complex process (Carhill, Suarez-Orozco, \& Paez, 2008). No single factor or theory seemed to be sufficient to explain the variability in success of learning English as a foreign language (Gass \& Selinker, 2001). The study carried out by Coleman et al. (1966) was the first major study in the United States that related students' backgrounds to their academic performance. His findings also suggested that student background had more influence on academic performance than schools did. However, while there was widespread debate and controversy over Coleman's findings, most scholars, in America such as Caldas and Bankston (1997, 1999), Hanushek (1986; 1997) and Steinberg (1997), endorsed Coleman's findings. Consequently, success or failure might be more related to what went on outside the classroom than inside. As Sue and Padilla (1986, p. 35) commented:

There is no question that English proficiency is essential to educational success, occupational achievement, and socio-economic mobility, but these occur in a socio-cultural context. Understanding this context can help to explain educational attainments of ethnic minority students and to provide alternatives that can lead to improved educational outcomes for these students.

Educational success, occupational achievement, and socio-economic mobility that occurred in a social context are ideas that were central to Krashen's acquisition hypothesis (Krashen, 1981), in which knowledge was gained in natural settings through interaction with society. Knowledge of this kind was not obtained through instruction in formal classroom settings, but through social practices and being a member of society. Such social practices involved gaining knowledge through exposure in a social context and outside of conscious awareness. The issue of acquisition is addressed in Chapter 5.

Student-level factors such as age (Ellis, 1985; Long, 1998; Penfield and Roberts; 1959), gender (Lietz, 1996; OECD, 2001), socio-economic status and home background (Entwisle \& Anstone, 1994; Hakuta et al., 2000) have been shown by research studies to influence proficiency on learning English as a foreign language. Furthermore, although such student characteristics contribute to the success of learning English, social context factors were also found to be important. These factors are considered in greater detail in the section that follows.

## Student Level Factors

## The Effects of Chronological Age in Language Acquisition

The effect of age in language acquisition is still a complex issue. There has been a long debate as to whether younger learners acquired a foreign language more quickly than older learners. The results of research on the effect of the age of student on both foreign and second language development have frequently merely added to the controversy (Griffiths, 2008).

Hyltenstam and Abrahamsson (2003, p. 539) stated that
Both the entirely successful adult learners and the slightly unsuccessful child deviate from the unspoken norm.

However, it has been argued that
The younger-is-better notion may be a result of misinterpretation of the facts, misattribution of causality and misemphasis on poorer adult learners while underemphasizing good older learners. (Marinova-Todd, Bradford Marshall, and Snow, 2000)

## Further Evidence from the Research Studies

Oyama (1976 cited in Griffiths, 2008) investigated 60 Italian-born immigrants to the United States. They were asked to read aloud an unrehearsed story. Then, they were assessed as to whether they had no foreign accent or whether they had a foreign accent. The results indicated that the younger the immigrants started to learn English, the more native-like their pronunciation. Other studies have shown that initially adults might learn more quickly than young learners.

Snow and Hoefnagel-Hohle (1978) conducted a study monitoring the progress of students who were newly-resident in the Netherlands and had begun learning Dutch. A few months after arrival, older students outperformed the younger students in the development of the new language. However, within about a year, younger students were able to surpass the level of performance of the older students. This suggested that further research was needed to identify the factors that might mediate the effects of age in the process of language acquisition. The research findings indicated that students' language skills continued to develop throughout middle and high school years (Nippold, 1998). Unfortunately, as grade level increased, their proficiency had been shown to decline at relatively the same age as native speakers of English (Hakuta, Butler, \& Witt, 2000; Saunders \& O'Brien, 2006).

Harley (1986) investigated student achievement in a French bilingual program in Canada. The findings revealed that younger students demonstrated smaller overall control of the verb system than adult learners after 1,000 hours of instruction. However, those students who started earlier achieved higher levels at the end. Fathman (1975) in his study concluded that for those who already spoke other languages, the order of language development was not affected by age. Moreover, while younger students did better in learning phonology, older students performed better on morphology.

## The Effect of the Critical Period Hypothesis on Language Acquisition

It was suggested that a critical period could explain age-related differences in language development. A 'critical period' is a period in which language could be learned more
easily than at other stages in life, and "once this window of opportunity is passed, the ability to learn languages declined" (Birdsong, 1999, p. 1).
The proponents of the critical period hypothesis stated that,

Biological changes in the brain around puberty result in the two hemispheres of the brain functioning independently. After this neurological change takes place, acquiring native-like competence in a second language becomes difficult, if not possible. This hypothesis has been controversial, and, with the development of recent technology allowing scientists to map mental activity, has been called into question. (Nunan, 1999, p. 41)

The evidence of the critical period in both first- and second-language acquisition has been investigated by psycholinguists. Penfield and Roberts (1959) have argued that after the age of ten years, acquiring another language becomes increasingly harder. The idea is after the first ten years of life, the brain loses its maximum "plasticity" or flexibility. The suggestion that "the brain is like a lump of plasticine that gradually hardens with age, seems a favoured one among investigations of the critical period" (Nunan, 1999, p. 42). This also suggested that the brain loses its flexibility after humans achieved puberty.

The loss of brain flexibility was possibly connected with the process of lateralization (Lenneberg, 1967). However, Dulay, Burt, and Krashen (1982) argued that lateralization developed much earlier than puberty, which suggested that it was essential to look for another factor for explaining age-related differences in second or foreign language development. Long (1999) suggested that

One possible explanation is the process of myelination which progressively wraps the nerves of the brain in myelin sheaths as the brain matures. Myelination delineates learning pathways in the brain, but reduces flexibility.

From much research evidence, it would seem that younger students were more successful in language development than adult learners. Ioup, et al. (1994, p.) rendered "any dogmatic assertions on the subject unsustainable." However, Bialystok and Hakuta (1999, p. 177) argued that
biological restrictions such as brain maturation should not be so easily overturned.

Therefore, it has been proposed that the term 'sensitive' period could be used in order to indicate that there was no

Abrupt or absolute criterion after which L2 acquisition is impossible but rather a gradual process within which the ultimate level of L2 attainment becomes variable. (Ioup et al., 1994, p. 74)

Ellis (1985), however, criticized this critical period hypothesis and argued that the hypothesis was only partially correct. The reason was that younger children had easier acquisition than adults. In fact, in the area of pronunciation, if young children started learning the first language and the second language earlier, their pronunciation was better. Unfortunately, the critical period hypothesis failed to explain why the loss of plasticity only affected pronunciation.

Although evidence relating to brain plasticity and the different functions of the two hemispheres had come from clinical work on both children and adults who had suffered physical injury, these were major shortcomings that weakened the evidence.

## The Effect of Gender

Both in developed and developing countries, in the study of foreign languages (FL) sex differences have been given considerable attention. Gender and its impact on educational outcomes in language learning had once more become an important question for educational research although initially, most research had focused on differential performance in science and mathematics.

The term gender has come to be used for not only the biologically based, variable associated with sex (whether male or female), but also for "the socially constructed roles (i.e., gender) which were created by the different ways in which the sexes were raised from birth and socialized within a certain culture" (Megarry, 1984 cited in Keeves \& Kotte, 1998, p. 1); Nyikos, 2008, p. 73-74). This argument led to the growing preference of many scholars and research workers to refer to "gender" rather than "sex" differences (Keeves \& Kotte, 1998). Sunderland (2000) emphasized that 'gender' had been involved in the investigation of a wide range of language related phenomena, such as literacy
practices, language tests, performance tests, self-esteem, learning styles, and strategies. Quantitative studies indicated that boys and girls behaved in "strikingly different ways" (Dornyei, 2005, p. 59). Therefore, since male and female students could be said to behave differently, the effect of gender in language learning, in particular foreign language (FL) learning, could not be ignored. This is consistent with Bugel and Buunk (1996, p. 16) who pointed out that

This is largely due to the fact that the study of foreign languages is generally viewed as a "female domain".

## Further Evidence from the Research Studies

Studies about understanding gender differences in educational performance have become of increasing interest. The concern with gender differences in foreign language learning, in particular, is linked to evidence from the results obtained from a variety of international and local assessment programs of reading literacy. Children consistently showed gender differences in the subject, favouring female students (Elley, 1994; Masters, 1997; Mullis et al., 2003; OECD, 2001). Recent investigation states that gender gap in reading widened in all countries in favour of girls (Walker, 2011; OECD, 2013).

Brain research on male and female students had helped explain differences in how modes of information processing developed (Tyre, 2005). The findings of biological research were "increasingly shedding light on neurological and hormonal differences in the brains of males and females" (Nyikos, 2008, p. 74). Legato (2005a) pointed out that the result of brain scan imagery studies undertaken by neuroscientists showed that to process language, females utilized the same area of the brain as males, however, depending on the linguistic task, women often used both sides of the brain, and when given the same tasks, women activated more areas in their brain than men did. Research has also reconfirmed that girls had "language centres" that matured earlier than those of boys (Tyre, 2005, p. 59).

The report of national surveys of literacy achievement among Australian school students in Years 3 and 5 had indicated that the mean literacy achievements of girls was higher at these year levels than those of boys and the differences were greater for writing and
speaking than for reading (Masters \& Foster, 1997). Furthermore, the results of national tests in some states in Australia such as Western Australia, Victoria and New South Wales indicated that there were significant gender differences in favour of girls in literacy achievement (Collins, Kenway \& McLeod, 2000).

ACER has reported that in all locations (Australian Geographic Category: Major Cities Australia, Inner Regional Australia, Outer Regional Australia and Remote/Very Remote Australia) females achieved higher mean scores on the PISA reading literacy assessment than did males (Cresswell \& Underwood, 2004). Consequently gender differences in reading achievement would not appear to be a result of living in urban, as contrasted to rural areas.

The research studies on boys and literacy (D'Arcangelo, 1999; de Woolfson, 1999; Eliot, 1999; Kleinfeld, 1998; Spear-Swerling, 2000; Teese, 2000) have indicated that in Australia, New Zealand, England and the United States the issue of boys in education had become the subject of major investigations. In Australia boys did not perform as well as girls on reading and writing tasks in Years 3, 5 and 7, and had a lower retention rate at Year 12 and made up the majority of participants in programs like "Reading Recovery" (Nyland, 2001).

Walker (1976) reported findings from the IEA Six Subject Study that sex differences in performance on reading comprehension tests, were in general, slight although girls in a majority of countries performed better than boys. However, the initial PISA results showed a pattern of gender differences that was consistent across countries. In every country, on average, girls reached a higher level of performance than boys (OECD, 2001). Moreover, work by Lietz (2006) has suggested that there were aspects of these studies that warranted further critical examination, with respect to gender references.

## Socio-Economic Status and Home Background

Socio-economic status is a major source of disparity in a student's performance in education both in Australia and overseas. Socio-economic status (SES) can be defined as "a person's overall social position ... to which attainment in both the social and economic
domain contributes" (Ainley et al., 1995, p. 5). In a number of studies of student performance at school, SES refers to the Socio-economic Status of the parents or family. SES is associated with parents' occupation, educational attainment, financial resources and wealth.

Dixon, Zhao, Shin, Wu, Su, Burgess-Brigham, Gezer and Snow (2012, p. 39) indicated that optimal condition for foreign language learners in the L2 context were influenced by higher family SES, parent and grandparent education as well as strong home literacy practices. Previous research has shown that there was a relationship between parental education and the development of academic foreign language proficiency (Entwisle \& Anstone, 1994; Hakuta et al., 2000). This was because the more educated parents, the stronger language environments they provided at home, that were not greatly different from the language environments provided at school (Dickinson \& Tabors, 2001). In particular, there was a clear link between the level of maternal education and language development. Children and youth of more educated mothers were exposed to more an academically oriented vocabulary and were read to more often, may be regularly, from books that were valued in school (Goldenberg, Rueda, \& August, 2006). This could be done by encouraging children to read together at home and generating family reading situations in order to help enhance the children's language development. Another more interesting reason was because learning to read and write a language began long before children in higher status homes entered school. Therefore, the engagement of parents or caregivers through activities provided children with a strong language environment that supported language and literacy development (Heath, 1983; Snow, Burns, \& Griffin, 1998). The involvement of parents and caregivers in literacy activities carried out either at home or at school was defined as 'family literacy programs' (Hannon, 2003). Recent research studies conducted by Steensel, McElvany, Kurvers, and Herppich (2012, p. 87) stated that "family literacy interventions seem to make a modest contribution to children's literacy skills".

The IEA results showed the significant relationships between socio-economic background and reading literacy varied from country to country (OECD, 2001) and over time (Keeves \& Saha, 1992, p. 330). However, the results of the IEA studies relating to
home status indicated that "measures of the socio-economic status of the home are positively related to student achievement in all countries, at all age levels and for all subject areas" (Keeves, 1995, p.23). Nevertheless, the effects of parental SES on children's educational achievement might be "neutralised, strengthened or mediated by a range of other contextual, family and individual characteristics" (Considine \& Zappala, 2002, p.1). What family members had (material resources, for example) could often be replaced by what family members did (for example parental support). The social and economic components of socio-economic status, in other words, might have distinct and separate influences on educational outcomes. Both components were clearly important, although social factors (for instance, parents' educational attainments) have been found to be more significant than economic factors, such as a family's capacity to purchase goods and services, in explaining educational outcomes (Considine \& Zappala, 2002).

## Language Learning Strategies

The concept of language learning strategies has different meanings for different people. People have described it as "elusive' (Wenden, 1991, p. 7), "fuzzy" (Ellis, 1994, p. 529), and "fluid" (Gu, 2005, p. 2). Language learning strategies were defined as "the techniques or devices which a learner may use to acquire knowledge," (Rubin, 1975, p. 43). This suggested that what students did involved an active approach. However, Oxford (1990, p. 8) argued that action did not consider reality since many strategies were mental processes (Macaro, 2006). However, "the term activities can be used to include both physical and mental behaviour" (Griffiths, 2008, p. 86). Although a number of researchers have used the term "learning behaviour" (Wesche, 1977) and "tactic" (Seliger, 1984) that were accepted as being more or less equivalent to "learning strategies" (Larsen-Freeman \& Long, 1990), 'strategy' was the term chosen by both researchers and practitioners (Ehrman, Leaver, and Oxford, 2003).

O’Malley, Stewner-Manzanares, Kupper, and Russo (1985, p. 23) defined language learning strategies as

Any set of operations or steps used by a learner that will facilitate the acquisition, storage, retrieval or use of information.

Oxford (1990, p. 8) defined language learning strategies as
Specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations.

Bialystok (1978, p. 71) defined language learning strategy as an "optional means for exploiting available information to improve competence in a second language". This suggested that learners chose their own strategy. The choice of strategy depended on

Contextual factors (such as teaching/learning method, learning situation, or task requirements), individual factors (such as motivation, style, age, gender, nationality/ethnicity/culture, personality, beliefs), and the nature of the learning goal. (Griffiths, 2008, p. 86)

Moreover, strategy was a means (Winne, 1995) that could be used to regulate or control learners' learning (Wenden, 1991). From long debates on defining strategy, Griffiths (2008, p. 87) suggested a definition of language learning strategies as

Activities consciously chosen by learners for the purpose of regulating their own language learning.

Some research workers have documented a number of studies regarding language learning strategies. For example, Hosenfeld (1976) and Naiman, Frohlich, Stern, and Todesco (1978) considered strategies used by good language learners. Bialystok (1978, 1981) examined the role of conscious language learning strategies within a theoretical model of second language learning. Wong Fillmore (1979) investigated the relationship between the use of language learning strategies and individual student differences. Cohen and Aphek (1980) looked at the use of mnemonic strategies for the retention of vocabulary.

## The Learning Situation

Norton and Toohey (2001) emphasized that the learning situation contributed to successful learning. Learning situations can vary considerably from learning a foreign language in the language target country (naturalistic) to learning language in informal instruction (home) or in formal classroom instruction. Factors such as socio-economic status and parental involvement may have an influence on English foreign language
proficiency. Aptitude, ability, perseverance and motivation, opportunity to learn, and quality of instruction are factors that contribute to success of English foreign language learning in formal classroom instruction. A brief overview of these factors in the formal classroom setting is discussed in Chapter 5. In the classroom, time of day instruction also differs since learning in the classroom may be conducted in the morning, afternoon, or at night. These different learning situations may influence learning English proficiency.

## Social Context Factors

Social context factors have been said to be
Elements of the complex worlds in which youth live that directly influence their learning outcomes by providing more or better opportunities to some and less frequent or less advantageous opportunities to others. (Goldenberg et al., 2006 cited in Carhill, Suarez-Orozco, \& Paez, 2008, p. 1158)

Therefore, it was argued that
The maxim "less contact, less learning" succinctly summarizes the arguments around the importance of exposure to English through language input and instruction. (Gass and Selinker (2001, p. 333)

Schools and universities were the major sites where English language learners learn English as a foreign language. Although learning English as a foreign language was undertaken in formal classroom instruction, interaction or socialization with teachers, between students, and English-speaking peers as well as adults were also essential (Jia \& Aaronson, 2003; Olsen, 1997; Valdes, 2001). This idea did not indicate that instruction was not important. However, learning a foreign language in a classroom setting devoid of interaction with other people was less likely to result in successful learners. Simply being exposed to the language being learned was not sufficient; associated interaction was also required.

This was consistent with Ellis' study (1984) which investigated the effect of formal instruction on the acquisition of question forms. Using Wh-questions for 'who', 'what', 'where', and 'when', Ellis set out to investigate the effects of approximately three hours of teaching on the learning skills of 13 children between the ages of 11 and 13 years. The children were asked to make up questions based on a picture of a classroom scene
at the beginning and again at the end of the three-hour instructional period. However, the result was disappointing since there was no significant increase on the children ability to use Wh-questions. Surprisingly, he found that those children who interacted least in class appeared to improve the most. Here Ellis found that quality of interaction was more important than quantity. In other words, communicative interaction was more useful than straight drills. Finally, Ellis (1984, p. 149) came to the conclusion

It would seem that 'exposure' ...is far more important than 'instruction'. In other words, it is not focusing on the form of 'when' questions that helped some of the children to develop, but the opportunity to negotiate a communicative task.

Swain (1985) investigated childrens' immersion programs in Canada. Actually, Swain's study challenged Krashen's (1985) hypothesis that was called 'comprehensible input'. Swain used instruction in a language that was not children's first language. For example, if children's first language was English, they received instruction in mathematics and science in French. During the study, the children received a great deal of comprehensible input. Surprisingly, comprehensible input was not effective at this stage. The participants' second language development was not as advanced as it should be according to the comprehensible input. When Swain (1985) evaluated what happened in the class, she found that

The basic instructional pattern was one in which the teachers talked a great deal, but the students got to say very little. (cited in Nunan, 1999, p. 45)

Therefore, Swain proposed an alternative hypothesis, which is called the "comprehensible output hypothesis" suggesting that giving opportunities to produce language led to language acquisition. In another words, it suggested that exposing students to practise the language in communicative situations would contribute to their language acquisition.

This idea was supported by Montgomery and Eisenstein (1985) who carried out an experimental study. There were two groups in the study, a control group and an experimental group. The control group received grammar instruction only. The experimental group received instruction and opportunities to use their language communicatively outside the classroom. On the final test, the experimental group had
better performance than the control group. When these groups took tests of grammar, surprisingly, although the experimental group received comparatively less grammatical instruction than the control group, the result for the experimental group was better. Therefore, Swain (1985) concluded that both instruction and interaction contributed to successful language acquisition. This was strengthened by Schmidt's and Frota's (1986) argument that

His own language only improved when he noticed the gap between his own production and that of the native speakers with whom he was interacting (cited in Nunan, 1999, p. 46).

A result of studies conducted with adolescent immigrant students in the United States suggested that

> Agency may be a key component of exposure, wherein older students choose linguistic environments that support the maintenance of their native language more frequently than do younger students. Evidence suggests that language usage differs substantially across environments (e.g., at home, at school, and with friends) for adolescents. To capture the experiences and opportunities of adolescent second-language learners, measures of exposure need to differentiate among domains of language use. (Jia \& Aaronson, 2003 cited in Carhill, Suarez-Orozco, \& Paez, 2008, p. 1160).

## ICT in English Foreign Language Teaching

Anderson (2005, p. 10) in his report published by Unesco argued that in the twenty-first century, all educators were currently working with Information and Communication Technologies (ICT) in schools. Moreover, Anderson (2005) emphasized that the
technologies involve much more than computers. Therefore, the abbreviation we use for information and communication technologies -ICTis a plural term to denote the whole range of technologies associated with processing information on the one hand and, on the other, with sending and receiving messages. (p. 9)

With the rapid development of ICT (Information and Communication Technologies), increasingly there is awareness among English foreign language teachers of the need to integrate ICT into their teaching. This is because teachers want to integrate good resources and new ideas into their teaching programs. Acknowledging the importance
and the high demand for ICT in education in general, therefore, Anderson (2005, p. 18) argued that there was a radical change in schools today.

In the 21st century, the ever-increasing needs of individuals and society are placing a heavy burden on established educational institutions. At the same time, traditional structures and modes of teaching appear less and less responsive to the challenges of our turbulent times. There is a clarion call for innovation and transformation among educators everywhere, especially in the elementary school, the most crucial stage in the development of a human being. Furthermore, the internal problems of schooling are inseparable from external changes on a global scale, and must be seen in the context of contemporary world problems. These, in turn, will not be solved unless approached and treated educationally, as well as economically, politically, and socio-culturally.

Students who enter school are communicative, curious, creative, and capable of learning many things. They have proved this already by mastering a mother tongue, physical motion, complicated games, and many other life skills. However, we believe that the traditional school of the 20th century, which is still very much with us, diminishes these abilities over the period of learning. We need a new kind of school for the 21 st century.

Internationally, there are considerable differences associated with ICT provision. In some countries, some schools may have full access to ICT, while other schools may have little access, or have no provision at all for financial reasons. Similarly, some teachers may have networked access at home, and not at school. Moreover, some teachers may have a lot of opportunity to use technology, and as a result they are very experienced with the technology, while others have never had any experience using technology. Many teachers have strong feelings concerning the use of technology in their teaching programs. This is particularly so, if these teachers have not yet been trained in its use. However, it must be realized that technology is only a tool at the teachers' disposal to help learners of a foreign language, and not an end in itself.

Davies (2003, p. 3) argued that
New media are not seen as a panacea for teaching or learning problems, nor are they a replacement for present models of language learning - ICT alone cannot provide a comprehensive basis for language learning. ICT must be integrated into present, proven and successful practice if full benefits of their advantages are to be reaped.

Furthermore, Cajkler and Addelman (2000, p. 171) added that several potential benefits of using the technology in the process of teaching a foreign language could be obtained in specific ways:
(1) It motivates pupils of all abilities.
(2) It enables pupils to work independently and away from the teacher.
(3) Disruptive pupils are often calmed by computers and work better.
(4) Teachers can create tasks based on the four language skills.

In this context, the role of teacher shifted from a didactic one to that of facilitator (Wood, 2005). This indicates that both teacher and students share experience; consequently, they are required to have basic ability in the use of technology. Access to the training is essential to keep them more confident and up to date in the use of technology in foreign language learning. Teaching English as a foreign language through technology, without doubt, is challenging and rewarding.

## The Role of the Language Laboratory in the English Foreign Language Setting

In the 1950s and 1960s the language laboratory rapidly became one of the most innovative teaching tools to help language students improve their skills in learning English. Moreover, technology first entered the language classroom in the form of the language laboratory. The presence of the language laboratory was very useful, in particular, when English was taught as a foreign language. This was because the language laboratory was usually equipped with authentic materials as well as appropriate audiovisual equipment that helped language learners become involved in the real world (Kilickaya, 2004, p2). This sort of technology could then be used to develop learners' aural and oral skills.

The emergence of the language laboratory provided great advantages for foreign language learners. The availability of technology in the language laboratory enabled language learners to listen to native speakers of English, to record their own voices on tape and to match the native speaker as the model, or simply to listen to a conversation. Each student had an opportunity to hear authentic English speech clearly and distinctly as well as frequently. Since rooms in the language laboratory were designed with the
installation of multiple tape-deck-equipped booths, students had greater opportunities to learn English from authentic materials in a variety of ways. The advent of the language laboratory brought new ways of learning since the availability of technology was viewed as an effective teaching tool. Moreover, language teachers developed new teaching techniques in order that potential advantages could be obtained from this tool.

However, the advent of the language laboratory was not without criticism for two main reasons: (a) the failure of teachers to implement appropriate activities and tasks that were especially designed for a language laboratory session, and (b) the confusion of the teacher's role in the language laboratory. Therefore, Lado (1973, p. 174) suggested that

Language labs should never be seen as a substitute for the instructor, on the contrary, language labs require better-prepared teachers who can put the new equipment and techniques to good use as well as conduct the class. When used properly, labs can greatly increase the effectiveness of good teachers, whether or not they are native speakers of the target language.

Moreover, Rivers (1970, p. 318-321) made three strong and important statements related to the use of the language laboratory:
(1) The language laboratory is not a method.
(2) The language laboratory is not a teacher.
(3) The laboratory work must be an integral part of the language program.

Rivers (1970, p. 319) also argued that
Teachers need to study carefully and critically the available materials to see that they are based on sound grammatical and pedagogical principles and are interesting to the students.

These statements indicate that teachers need to pay attention to the materials they are going to bring to the language laboratory session; otherwise the use of the language laboratory and its effectiveness cannot be achieved. The advance of modern technology in the language laboratory can help students improve their listening comprehension, speaking, pronunciation as well as the use of grammar in a communicative context (functional grammar). The role of teachers is then to pay close attention to students' improvement during the time spent in the language laboratory sessions, in addition to planning and providing relevant materials for the sessions.

Learning English in the language laboratory was advantageous for learners since students were able to participate actively as much as possible repeating statements aloud instead of waiting for their turn (Brenes, 2006, p. ). Rivers (1970, p. 320) added that

In a class of thirty and more students, it has not been possible during classroom sessions to give each student all the practice he needed, and there has been no effective way of controlling the amount and accuracy of his learning practice out of schools hours. With the establishment of a laboratory, much of this individual practice takes place in a situation where an accurate model and immediate correction of mistakes are available. Each student is provided with carefully graded and sequenced learning practice, and a way of verifying how he is progressing. It must be emphasized, however, that the effectiveness of the learning is dependent on the thought and care which the teacher has put into programming of the practice tapes. The work of the students in the laboratory will be only as good as the program with which they are asked to work.

The statement indicates the positive benefits of the use of the language laboratory for foreign language learners. However, the advantages of the language laboratory sessions can be achieved only if the programs are well designed.

After discussing factors that have an influence on the learning of Englishas a foreign language, it is now able to be understood that the factors are many. It starts from the individual context factors covering age, gender, and learning strategies, home as an informal context including socio-economic status (SES) and home background as well as parental involvement, social context factors involving learning situation, interaction with teachers, interaction between students, interaction with native-speakers of English, and interaction through multimodal technology as well as the use of the language laboratory. In addition, classroom as a formal context factor involving aptitude, ability, opportunity to learn, quality of instruction, and perseverance has an important role on the success of learning English as a foreign language.

From the discussion above, it is acknowledged that factors that influence on the success of learning English are very complex. When these factors are combined, they produce a context model which is diagrammatically presented in Figure 4.1.


Figure 4.1 Factors Which Influence English Language Proficiency in Specific Contexts

## Examining the Language Context in which the Learning of the English Language Takes Place

There are two language contexts in which the learning of the English language takes place, namely, (a) an English-speaking environment, and (b) a non-English speaking environment. The learning of the English language which takes place in an Englishspeaking environment leads to first (native or national) language learning and to second language learning. In this setting, English is spoken as the native language or national language of the country as well as the second language for some students. Thus, English is spoken as the second language in ex-British colonial countries. The learning of the English language which takes place in a non-English speaking environments leads to foreign language learning. In this setting, English is not readily available in countries where English is learnt as a foreign language. English is not spoken in this context, but is learnt as a foreign language and is usually formally included in the curriculum as a specific subject.

Kachru (1992) in his book The Other Tongue: English across Culture and Kachru (2005) in his book Asian Englishes Beyond the Canon discussed countries in which the English language had developed extensively and stated within which group or circle those countries belonged. Kachru (1992; 2005) conceptualized the geographic and historical spread of English as the 'Three Concentric Circles Model'. This model is illustrated in Figure 4.2.


Figure 4.2 Three Concentric Circles Model of Englishes.
Source Kachru (1992, p. 356; 2005, p. 13)

As the name of the model suggested, Figure 4.2 showed that there were three circles concerned with the use of English in specific countries. English was categorized in the Inner Circle when English was spoken as a first language (L1) or mother tongue, in such countries as Australia, New Zealand, Canada, the United Kingdom and the United States. The Outer Circle involved the category of countries in which English was used as a Second Language (ESL) such as India, Singapore, and Hong Kong. English in countries such as Indonesia, China, Japan, and Korea was regarded as a foreign language (EFL), and these countries belonged to what was referred to as the 'Expanding Circle'.

## Summary

There have been two main contexts, namely (a) individual context and (b) social context that have the potential to influence the development of English Foreign Language Proficiency. Factors such as age, gender, socio-economic status and home background are involved in the individual context. The social context involves factors such as the learning situation or setting where the English language is learnt. The learning of English as a foreign language is conducted in the setting or in a country in which the language is not spoken widely. The English language is not readily available there. The English language is not used as a means of communication in daily life, in business, in broadcasting as well as is not used as a medium of academic instruction in schools and universities. The learning of the English language is conducted only in formal classroom instruction. Therefore, under these circumstances, opportunities to use English are very few and can influence the success of learning English as a foreign language.

The advance of technology has provided more opportunities for both teachers and the learners of English to integrate technology and language learning. Integrating technology into language learning is not restricted to the use of technology for transmitting information from teachers to students, but the integration is also much more emphasized through the use of technology to teach a foreign language. For example, learners of English can learn English through instructional software that facilitates use. From the software, learners of the foreign language can learn words in English, match
words with their meaning, or listen to a native speaker of English, as well as practising the speaking of the language.

The language laboratory, without doubt, has an important role as a tool to learn a foreign language. Carefully developed teaching and learning material can lead to greater success in learning English as a foreign language. Consequently, relevant and appropriate materials for the language laboratory session have to be planned carefully. Since the language laboratory contains technological installations and equipment, teachers must be sufficiently trained in order that they feel confident in the use of the technology.

Moreover, there are three additional contexts in addition to (a) individual context and (b) social context that are very important in the teaching and learning of English as a foreign language. These contexts are: (c) the home as an informal context that involves socioeconomic status (SES) as well as parental involvement; (d) the classroom as a formal context that involves opportunity to learn, and quality of instruction, and (e) the peer group and tutoring context that involves the availability of a friend, a teacher, a tutor as well as an intervention (treatment) that helps the learner of English to succeed in learning a foreign language. A factor that involves formal classroom instruction is discussed in the chapter that follows.

## CHAPTER 5 <br> THEORETICAL FRAMEWORK OF THE POLICY ORIENTED RESEARCH INVESTIGATION

## Introduction

This chapter examines the theoretical framework of a policy oriented research investigation. Consequently, the chapter focuses on language acquisition theories, namely theories of how languages are learned. Moreover, this investigation takes place in a context where English is identified as a foreign language. A model of foreign language learning, based on the work of Carroll ( $1962 ; 1963 ; 1975 ; 1989)$, is used as the theoretical framework of the study. However, the English language has a different status in different countries. It can serve as either the mother tongue, the national language, a second language, or a foreign language in specific countries. Many scholars and textbooks as well as international journal articles distinguish between English as a second language (ESL) and English as a foreign language (EFL). However, some scholars employ the term 'foreign' language under the more general term of 'second' language. This is despite the fact that a so called 'second language' may in reality be a learner's third, fourth, or fifth language and is used widely as a means of communication. Since this study is conducted within the context of learning English as a foreign language, a discussion of differences between second language acquisition and foreign language acquisition is necessary. Likewise, the differences between language acquisition and formal instruction must also be considered. This chapter begins with a general overview of the theories, hypotheses, and models involved in language learning.

## Theories, Models, and Hypotheses

This study is based on a theoretical framework or foundation, and a distinction between theory, hypothesis, and model is considered necessary. This is because the study also involves the construction and examination of models. The theory involves a collection of ideas and relationships that are interrelated within a system or framework that can be meaningfully interpreted. The theory provides an explanation of a situation and events
occurring in the real world, and must be validated by tests of coherence with established knowledge, and within its internal causal structure, as well as against evidence obtained from the real world.

Furthermore, there is a need to unify a series of generalizations about the world and a series of observations about the world when accounting for or predicting events in the future. The generalizations-based theory derives initially from regularities and constancies in our experience of phenomena as Kaplan (1964, p. 85) wrote

Recognition is the source of all our natural knowledge. The whole scientific theory is nothing else than an attempt to systematize our knowledge of the circumstances in which such recognitions will occur.

Theories are also used to generate hypotheses and models that can be tested empirically. For example in all branches of science, a theory can generate hypotheses that must be tested by experimentation or observation. Theory is different from a hypothesis. A theory unifies various ideas and relationships about phenomena. A hypothesis is usually an idea or relationships about a single phenomenon. From the theory, and the structure of its framework, hypotheses can be advanced either singly or as a model, for validation with evidence observed or collected from a designed situation or a series of events or practices occurring in the real world. The model is essentially a collection of interrelated hypotheses that are developed from a theory (Keeves, 1997, p. 386).

## Some Definitions in Language Learning

This section first discusses differences between a mother tongue, national language, second language, and foreign language. Keeves and Darmawan (2007) argued that it was important to make distinctions between mother tongue, national language, second language and foreign language.
Mother tongue is learnt before going to school. It is usually called a 'First' language (L1), a 'Native' language or a 'home' language.

National language (NL) is learnt in primary school. A national language is the language of the country or national group of people.

Second language (L2) has a specific and limited meaning and relates to a person who moves from a native language situation or from a national language situation to a
situation where another language is widely used. This additional language is referred to as a 'second' language (L2).

The learning of a foreign language (FL) takes place in a situation where the learning of a further language involves a new language that is not widely used in that new situation.

## Foreign Language and Second language: Different Motivations, Attitude, Situations, and the Language Users

The English language may serve a different role and status in different countries. The English language may be native to a particular country, but may not be native to other neighbouring countries. Similarly, English may be foreign to some countries, but it may be a second language in a particular country. Stern (1983) distinguished between languages learned with reference to a speech community outside (foreign) or inside (second) the national territorial boundaries or situations in which the learning takes place. However, some researchers such as Magura (1984) and Lowenberg (1984) suggested the need for a reconsideration of the familiar 'foreign-second' dichotomy used to characterize language learning contexts. Following Stern (1983), Magura (1984), and Lowenberg (1984), Berns (1990) explored whether or not the dichotomy 'foreignsecond' was adequately descriptive of what really happened among learners of another language. Berns (1990, p. 1) came to the conclusion that

A dichotomy of contexts is insufficient to explore the complexities of language settings and offers instead the notion of a cline or continuum of settings.

Ferguson (1966) was the first person who suggested the method for description as a means of systematically representing the complex nature of language use in a speech community. Crystal (1997) argued that it was useful to make a distinction between first, second, and foreign language status. However, it is important to note that these three categories must be carefully distinguished, and not just involve a simplistic interpretation since there are complex differences between them, in particular, between second and foreign language. Although some scholarly sources tend to include the terms 'foreign language' under the more general term 'second language', it is important for the researcher and test administrator, or for the teacher to make a clear distinction between a
foreign language and a second language. Lewis \& Massad (1975, p. 25) argued that although the two kinds of language learning had some of the same psychological factors that influenced their learning, they operated differently.

From the sociolinguistic perspective, the most typical features which sociolinguists viewed in describing second language, or foreign language, were: (a) the users of the language; (b) the function that the language performed; (c) the motivations for learning the language; and (d) the learners' attitudes towards learning the language.

Although a foreign language has not often received as much attention in many schools as other subjects, there are differences between countries in this respect. Many countries such as Indonesia, Japan, and Korea include English as a part of the school curriculum. It is strictly a foreign language to be taught only in a classroom setting. The people in these countries currently have limited contact with English speaking countries. Moreover, these countries were formerly not colonialized by the British as were such countries as India, Hong Kong, Malaysia, and Singapore that were British colonies. Indonesia, for example, is a multi-ethnic country. Therefore, there can even be more than one language and culture within any one of the many islands of Indonesia. As a multi-ethnic country, Indonesia has hundreds of different local languages spread over the different parts of Indonesia. Hence, generally each individual speaks two languages, a local language (Bahasa Daerah such as Javanese, Bataknese, Acehnese, etc) as mother tongues and the National language (Bahasa Indonesia). Historically, Indonesia was occupied by the Dutch; therefore during this period Dutch was the administrative language for Indonesia although Dutch is not used anymore. Indonesia is now very different from its neighbouring countries, since there is a drive for Bahasa Indonesia as well as a movement towards English for globalization purposes.

Interestingly, although English language instruction in Indonesia begins in primary school, the degree of competence learners develop is relatively low. This is because of the small role of English in the school curriculum. However, English has a high status in Indonesia since it is a subject tested at the Final National Examination at both Junior and Senior High School levels as well as a subject tested in the University Entrance Examinations, which are highly competitive. Unfortunately, these examinations rarely
involve a listening or speaking component, and they focus more on reading abilities and knowledge of language such as grammar and structure, as well as vocabulary. Consequently, teachers of English emphasize more the preparation for the examinations than developing another skill such as 'communicative competence'. Moreover, class size and rote-learning are seen to be obstacles that contribute to the lack of attention to oral performance. However, once students choose to continue their study and enrol in an English course at the university, they find that oral communication is given more attention as is indicated by the availability of a skill, named 'oral fluency'.

Such countries as West Germany have closer contact with English speaking countries for economic reasons. As a part of Europe, West Germany provides an excellent example of the use of the English language as the means of communication in everyday life. The use of English is not restricted to particular domains such as business and commerce, but in Europe English is used by all types and classes of people across national frontiers.

Berns (1990, p. 6) noted that English in Europe as
> part of all school curricula; is used to some extent in all media; is the source of extensive word borrowing; is available through contact with native and non-native users within West Germany in a variety of domains and for a range of purposes; and is learned to varying degrees of competence by West Germans of all social, economic and educational levels.

The reason why West Germany had a lot of opportunities for the use of English was because of its trade relations conducted with other surrounding countries. Smith (1987) reported that English was the language most used in routine phone calls, letters, telexes and conversations among companies doing business outside West Germany. English was also a requirement for looking for a job in West Germany. However, in West Germany, English is taught as a foreign language.

Countries such as Hong Kong, India, and Singapore are more exposed to mass communication in English because these countries made a decision to continue to use the ex-colonial language of English. These countries which frequently used English in some parts of their past life could be said to enjoy an English "presence" more than other countries did (Lewis \& Massad, 1975, p. 24). However, India is very different.

Annamalai (2001, p. 35) stated that as one of the world's largest functionally multilingual countries, India had
forty-seven languages used in education as medium, eighty-seven in press, seventy-one in radio, thirteen in cinema and thirteen in state level administration.

English taught in India is not to be identified with the English taught in Indonesia where English lacks such strong historical support. English in Indonesia is really a foreign language, while English in India is used extensively both in education, law courts, and administration since English serves as a second language. Lewis and Massad (1975, p. 25) argued that

A second language is ordinarily acquired under the stress of immediate environmental requirements; the same pressures, whatever the motivation of the student, do not exist for acquiring a foreign language.

The perspectives of the situation influence the profile of English usage in the diverse socio-cultural contexts, namely second, foreign, or neither. Thus, a question must be raised 'How is a foreign or second language identified?'.

Berns (1999, p. 8) contended that if the speech community outside the country was used as the reference for learning a foreign language, then countries such as Indonesia, Korea, China, and Japan appeared to qualify as foreign language learning contexts for English. Opportunities to use English in these countries were very limited both in the classroom and outside the classroom. Attempts to encourage the development of a non-native English-speaking speech community as a reference group were also small. In this setting, a non-English speaking person was learning English in a non-English speaking situation, for example learning English as a foreign language in Indonesia. Because of its status as a foreign language, English was not widely used as a means of communication in Indonesia. Thus both teachers and students all shared a similar history of being either Indonesian, Korean, Chinese or Japanese. Learning a foreign language occurred many years after learners had started to acquire their first language and several years after they had started to learn the national language. In Indonesia, it often happened that after leaving the classroom where Bahasa Indonesia was spoken as the national language, students would return to speaking their mother tongue such as Hindi in Bali. They only started to learn English during their Primary Schooling.

In India, Berns (1999, p. 8-9) also explained that
If a second language is one learned with reference to a speech community in the country in which the learning is taking place, India is clearly a second language learning context for English.

In India as is mentioned above, English is used extensively as a means of communication in education, law courts, and the administrative network and educated Indians who are regarded as a non-native English speaking speech community serve as a reference group.

## National Language, Second Language, and Mother Tongue

However, there is another situation where a language is also identified as a second language. This occurs with respect to a situation where the national language is a language other than the mother tongue, and the national language is first learnt as a second language when children start schooling. For example, people in Indonesia learn the national language, Bahasa Indonesia, as a second language, since there are the varieties of different regional or vernacular languages in different parts of Indonesia which serve as the mother tongue or the home language, a first language, and native language.

Likewise if a person is learning English in an English-speaking situation or country, and that person's 'native language' is not English then the person is learning English as a second language. For example international students or immigrants who are learning English in Australia are readily able to use the English language actively. In this context, the group of people for the most part of second language users is quiet heterogeneous. Many students from different countries can be found in the same ESL (English as a second language) classroom. For example, an ESL class in Australia can be attended by students from a great variety of countries such as Cambodia, Korea, Vietnam, Japan, Laos, Thailand, and Bangladesh. Moreover, in ESL settings, students have many opportunities to use English outside the classroom since the goal is often tied to literacy. The students are using English actively in order to be able to read, to write and interact in English in culturally defined ways. Moreover, in such countries international students
learn and use English because English is employed as the medium of academic instruction in the classroom since textbooks, and reference books are written in English.

Indonesia can also be seen as a member of this group in a particular situation. There are a large number of Indonesian students who are studying in English speaking countries. Although English is not spoken in Indonesia, these students realize that they have to speak English in countries where English is used widely. Thus, Indonesian students learn and speak English as a second language. In such countries since these Indonesian students learn English in a language-target country they have opportunities to use the English language actively. Moreover, these Indonesian students have mastered their first language (native language or mother tongue) as well as their national language before they go to English speaking countries. Therefore, these students learn and speak English as a second language, but when they go back to Indonesia, these students learn English as a foreign language since the English language is not spoken in Indonesia, and the English language is not readily available in Indonesia outside of the formal situation.

## The Foreign Language - Second Language Cline

Therefore, what is the status of English in Germany? Similar to Indonesia, Japan, Korea, and China, English in West Germany is generally considered a foreign language. However, West Germans have a lot of opportunities to use English both as a tool of communication in wider society as well as for professional purposes. Since West Germans rely on trade relations for keeping its economy alive, people in this country have more opportunities to contact British speakers. They do not need to travel overseas or work in international firms to use English. They use English automatically in their life. Therefore, the use of English in Indonesia and Japan is different from the use of English in West Germany. Looking at these conditions, is it appropriate to consider English as a second language in such a country? Unfortunately, it is also difficult to compare the status of English in West Germany to English in India or the way English is used where English is learnt as a second language. English is not used in West Germany as the medium of instruction both in schools and Universities; it is not the language in law courts or in literature.

Berns (1999, p. 9) argued that the context of West Germany was not analogous to that of Japan, Indonesia, Korea or China because West Germans had extensive contact with a range of social groups in English within the borders of their country. Therefore, the best way to describe English in West Germany was to use the concept of a 'cline', or 'continuum'. On this continuum, 'foreign' could be placed at one pole, while 'second' at the other. Therefore, using this description Indonesia, Japan, Korea, and China could be placed on the cline near the foreign language end (as strictly foreign language), and India near the second language end. However, West Germany could be placed near the midpoint which indicated that English had neither a strictly foreign nor a strictly second language status. This can be illustrated in Figure 5.1.


Figure 5.1 Description of the Language Continuum

Interestingly, there is also another term to describe English that is neither strictly a foreign nor strictly a second language. The use of English at international conferences, in international business and commerce occurs between non-native speakers of English. Consideration of the use of English as a means of international or global communication is involved.

In terms of motivation and attitudes toward the learning of English, important differences operate. For instance, Spolsky (1969) explained that although attitudes and positive motivation contributed to the second and the foreign language learning, attitudes had more influence than motivation in learning a second language. Pimsleur (1964) argued that this was because motivation was strongly influenced by the ethnic group whose language was involved. Pimsleur (1964) added that personal attitudes in the foreign language learning situation did not weigh as heavily as in the second language learning situation. This was because the relevant ethnic group was by definition remote and thus motivation became heavily involved.

Compared to a foreign language, a second language was acquired early in life and was more embedded in the fundamental processes of child development. Lewis and Massad (1975, p. 25) argued that

A second language is often learned during the development of the basic conceptualizing processes, while the fundamental concepts themselves are being formed. The foreign language, on the other hand, is usually introduced when the processes have been firmly established and concepts have reached a considerable degree of maturity.

These differences are also reflected in the objectives set for learning a second as distinct from a foreign language. On the one hand the objectives of second language learning are more for fulfilling the aims of a society in education, health, and citizenship and social integration. On the other hand, the teaching of a foreign language is much more for broadening a student's knowledge than for developing personal qualities.

However, since information and communication technologies in a global era are rapidly developing, the objective of teaching English as a foreign language is not restricted to broadening a student's horizon since the English language is seen as an essential means of global communication. Thus, it is important to shift the perception of learning English as a foreign language to considering English as a global language since people are now learning to live in a global world.

Recently, Dixon, Zhao, Shin, Wu, Su, Burgess-Brigham, Gezer, and Snow (2012, p. 6 AERA March 2012) stated that "second and foreign language education are topics attracting increasing interest across the globe". Hu (2007) argued that the explosion of learning English as a foreign language around the globe also made second language (L2) education a mainstream endeavour. Therefore, this is a challenging situation for educators to help learners of English, in particular, since foreign language learners reach the level of satisfactory English proficiency in order to meet the needs of living in a global world. The issue of a global language is addressed in Chapter 2.

## Situations for Language Learning

There are differences in terms of both the learner's characteristics and the environment in which first, second, and foreign as well as neither foreign nor second language
acquisition, typically take place. The differences between the characteristics and learning situations (context) of the following learners are presented in Table 5.1.

Table 5.1 Situations for Language Learning

| Language | Context |
| :--- | :--- |
| First language | Young children learning a first language at home with their parents or <br> caregivers |
| Second language | Young children learning a second language in informal settings (day care or <br> playground). <br> International school children attending a second language class (formal <br> classroom setting) in the language-target country. <br>  <br> International student learning a second language in both academic and non- <br> academic environments in the language-target country. <br>  <br>  <br>  <br>  <br>  <br>  <br> Language learners learning a national language as a second language in their <br> home country. <br> Language learners learning a colonialized language as a second language in <br> their home country. |
|  | Adult immigrants with limited or disrupted education working in a second <br> language environment and having no opportunity to attend language classes. |
|  | Educated adult immigrants working in a second language environment. <br> Adults learning a second language in the language target country because of <br> marriage. |
|  | School children learning a foreign language in their home country taught by <br> non-native or native speaker teachers as part of the school curriculum. |
|  | Adults taking a foreign language private course taught by non-native or native <br> instructors in their home country. |

Differences in the contexts, where the learning of foreign and second languages take place, have great implications for language teaching practices.

## Implications for Language Teaching Practices

The different perspective on how languages are learned is of very great practical importance to all teachers. The assumption that a learner wants to use a language in a native-speaking community cannot be made. This is because a speech community does not necessarily consist of native speakers. For example, if an Indonesian student wants to speak to a Japanese student about a building problem, or to a Korean student about a large building, the only possible common language is English since the issues are highly technical in nature. In order to be competent English users, interaction with non-nativespeakers may be more important. In this situation, Indonesian, Japanese, and Korean students are non-native speakers of English. This can have consequences for teaching such as reconsideration of standards of pronunciation since a non-native speech
community is likely to have its own norms. Another possibility is exposing a learner to the varieties of a language and the diversity of its speech community.

The different profiles above also suggest that speakers have their own roles in using a language, for example, international conference attendants, international firm managers, hotel staff, business workers, or tour guides. Each learner requires a different range of skills or level of proficiency to serve one of these roles since the competence required for work as a hotel staff member is not the same as that of a business worker in an international firm. The implications that the different roles a learner has to fill in a language learning context involves providing for a diversity of purposes in learning a diverse curriculum.

Berns (1999, p. 11) argued that
It seems that the perspective of the learner, which identifies the purposes for learning, is viable and valuable for the learning contexts of all languages, whether they are considered international, foreign, second or something in between.

Since second language and foreign language learning are different, it is necessary to examine how a second language or foreign language is learnt, before considering how a global language such as English is acquired.

## Second Language Acquisition (SLA) and Foreign Language Acquisition

Acquisition is a process through which someone learns one or more second or foreign languages. In the second language acquisition (SLA) context, the term 'acquisition' has many meanings. This is because the measures that researchers in the area of SLA use are widely different. This would seem to indicate "that they are in fact studying very different phenomena" (Ellis, 1999, p. 233). It has been argued that this could not be avoided since there were a variety of terms (although they would not be equivalent) that reflected such distinctions as 'acquisition' versus 'learning' (Krashen, 1981) and 'implicit' versus 'explicit' (Bialystok, 1978; Ellis, 1990).

Since there were many terms associated with 'acquisition', Ellis (1999) argued that this variety of terms was referred to as "types of acquisition". Ellis (1999, p. 35) also pointed
out that traditionally, a distinction was made between "incidental" and "intentional acquisition". Researchers such as Schmidt (1994), Robinson (1995), and Skehan (1998) made the two important distinctions involved in the term 'acquisition'. First, this was associated with how a language learner approached the task of learning the language, whether "intentionally" or "accidentally". Second, this was concerned with how the learning took place, whether "implicit" or "explicit". Although in considering second language acquisition researchers widely accepted that acquisition could be intentional or incidental, Ellis (1999, pp. 233-34) contended that

There is less unanimity regarding the possibility of both implicit and explicit learning, with some researchers (e.g. Krashen, 1981) maintaining that acquisition is necessarily implicit, others (e.g. Schmidt, 1994; DeKeyser, 1995) suggesting that it may be explicit.

The distinction between 'implicit' and 'explicit' learning has been one of the critical issues in language acquisition controversies and has evoked serious debate over recent years. Questions about the effectiveness of 'implicit' and 'explicit' learning have occupied the attention of researchers (De Keyser, 2003; Ellis, 2005; Hulstijn, 2005). These two terms, namely 'implicit' and 'explicit' have been variously defined by psychologists (Reber, 1993).

Krashen (1981) in his Monitor Model distinguished between 'learning' and 'acquisition'. 'Acquisition' was the process of learning language in natural settings and occurred outside of conscious awareness. Natural settings involved the learner living in the language - target country. Language learned in this way was said to be implicit (Williams, 2005), since the learning occurred through exposure to everyday social contexts and without formal tuition (Kelly, 1998). Interestingly, "acquisition was more likely to occur with reference to listening and speaking although acquisition was also involved in learning to read" (Keeves, 2007, p. 20). Second language learning (L2) in natural settings might involve acquisition or implicit learning (Kelly, 1998; Johnson, 2001).

Interestingly, the learning of a second language can take place either in a formal or in an informal situation. For example, international students who attend ESL classes in some Australian schools are taught formally in order to help them adjust to their mainstream class. The learners can learn a second language formally, regularly, and systematically in
classroom settings, in which the situations are different from the formal classroom setting in foreign language learning, with the presence of teacher or instructor working within a limited period of time. However, the function of classroom instruction for learning a second language only involves additional or extra support, and not teaching English as a specific subject, in order to help students to learn English formally. Students are mostly exposed to natural situations where the English language is readily available for formal learning. Thus, the learning can take place informally through social contact such as in the workplace, or 'picking up' in the playground, on the road, in the shop, in personal conversation, or 'chatting' through the internet, which bring speakers of different languages into contact, and make communication possible only in English.

Ellis and Barkhuizen (2005) contended that acquisition would seem to be closely related to so-called 'interactionist' approaches since learning in this way might involve interaction within society. These approaches explored the interconnection of learning, language, interaction and society and offered a "holistic perspective of language learning, where individual and social merge into one and where use and knowledge are distinguishable" (Ellis \& Barkhuizen, 2005, p. 229). Some scholars such as Hall and Verplaetse (2000), Lantolf (2000) and Ohta (2001) published articles which incorporated a social and contextual dimension and which have established a school of Sociocultural Theory (SC) within Second Language Acquisition (SLA), based primarily on Vygotskian concepts. Vygotski $(1978 ; 1986)$ had emphasized the social context and situations in which learning occurred implicitly and socio-cultural theory tended to work top-down from Vygotskian cognitive constructs such as the Zone of Proximal Development (ZPD) (Hua, Seedhouse, Wei, Cook, 2007, p. 10).

By contrast, learning language through formal classroom instruction was highly explicit language learning (William, 2005) and would seem to correspond to learning a foreign language since it was reserved for the formal study of foreign languages in classroom settings. A language was considered foreign if it was learned largely in the classroom and was not spoken in the society where the teaching took place (Kelly, 1998). It has been argued that "formal classroom instruction was more likely to take place with respect to reading and writing" (Keeves, 2007, p. 20) and generally focused on teaching grammar and structure. Therefore, it could be said that formal classroom instruction was
indirectly influenced by an approach that also emphasized language learning through grammatical rules.

Although technology has developed rapidly and shown its influence in society, a foreign language is now learnt more through formal classroom instruction than are many other subjects of the school curriculum. As the name suggested, learning a foreign language has little background support either in the extra-curricular activities of the school or in the home environment. This is not the case for mother tongue, a national language or many other subjects such as History, Science and Mathematics. Moreover, children learnt and practised the arts and crafts before they went to school. It is also necessary to acknowledge that formal classroom instruction of itself appears to be insufficient for mastering a foreign language in all four modes of speaking, listening, reading, and writing. Under these circumstances it is necessary to examine the theoretical framework of language learning, particularly foreign language learning, at the school and university levels.

## Theoretical Framework for the Investigation

This study is conducted within the setting of learning English as a foreign language. It is useful to examine work that has contributed to the generation of theories of how a language is learned. In this study, the theoretical framework begins with a model of language learning based on Carroll's Model of Foreign Language Learning. The reason for using this model is for explaining factors that contribute to the success of learning a language, in particular a foreign language, since this study operates within the learning of English as a foreign language.

## Carroll's Model of Foreign Language Learning

Carroll (1962; 1963; 1975; 1989) proposed five variables as the basis of his model. These were (a) aptitude, (b) perseverance, (c) opportunity to learn, (d) ability to understand instruction, and (e) quality of instruction. Figure 5.2 illustrates Carroll's model of foreign language learning that is used as the theoretical base of this study.


Figure 5.2 Carroll's Model of Foreign Language Learning (1962; 1963; 1975; 1989)

Carroll (1963) argued that (a) aptitude was measured by the time needed to learn; (b) perseverance was measured by the willingness of the student to engage in active learning; (c) opportunity to learn was measured by the time provided for instruction; (d) ability to understand instruction was measured by the ability of the student to comprehend the task; and (e) quality of instruction was measured by how the learning task was organized, and how the instructor's skills influenced the effectiveness of presentation. It is interesting to note that the first three variables are specified in terms of time.

## The Use of Carroll's Model of Foreign Language Learning

The publication of the article 'A Model of School Learning' (Carroll, 1963) elicited much more attention than the author had anticipated when he wrote it. Carroll (1988, p. 26) pointed out that:

The model had its roots in work on foreign language learning that showed that persons with low aptitude, as measured by certain tests, generally took much longer to achieve a given criterion of learning than persons with high aptitude.

In addition to aptitude, four other variables namely, opportunity to learn, perseverance, quality of instruction, and ability to understand instruction, were
initially embodied in a formal, quasi-mathematical model in a technical publication on foreign language learning (Carroll, 1962). These variables were proposed to be the factors that would account for variation in school achievement particularly in the learning of foreign languages.

The model of school learning that was published in 1963 (Carroll, 1963) has taken an important place as a useful guide in conducting research and a variety of aspects of education and teaching. The model has been cited and quoted in a number of investigations on teaching and learning in schools. Consequently, the model of school learning has had an increasing influence in many areas of education, not only in the United States but also in many developed and developing countries.

However, Cool and Keith (1991, p. 28) stated that "most investigators have not included all these variables simultaneously in investigations of school learning, and few have focused on indirect as well as direct effects".

Subsequently, Carroll (1988, p. 26) argued that in addition to the learning of a foreign language

It seemed reasonable, however, to generalize the model to apply to the learning of any cognitive skill or subject matter.

Husén (1975, p. 11) also argued that
The comparative study of French as a Foreign Language provided a unique opportunity of testing the Carroll model cross-nationally... The studies that Prof. Carroll has conducted on the role of time are, indeed, fascinating, not least since he is able to assess the potential in terms of student achievement in using a given amount of time. Evidently, it should be of great importance to educational planners and policy makers all over the world to be able to grasp more quantitatively the implications of introducing the study of a foreign language at one age instead of at another.

Furthermore, Husén (1975, p. 10) stated that
This model has, it seems to me, played an important role in modern thinking about the teaching-learning process, for instance, when Professor Benjamin S. Bloom, ... developed his theory of mastery learning.

Bloom (1968) was one of the educators and educational researchers whose thinking was very much influenced by Carroll's model and Bloom used the model as a basis for his concept of mastery learning.

Carroll's model of school learning was expanded and adapted by many educational researchers (Carroll, 1988, p. 27). Acknowledging that Carroll's model has its origin on work of foreign language learning, it is meaningful to employ this model in a specific learning situation that is in a university that teaches English as a foreign language.

## Language Aptitude

A new concept of aptitude was advanced by Carroll (1962, 1973, 1976, and 1981) who proposed foreign language aptitude as a variable that influenced the success of learning other languages. Aptitude was defined in terms of speed in language learning.

Carroll and Sapon (1959, cited in Gardner and Macintyre, 1992, p. 214) designed a formal test of language aptitude that was called the Modern Language Aptitude Test (MLAT). This test assessed four subskills believed to be successful predictors of foreign language learning. They were (a) phonetic coding ability, (b) grammatical sensitivity, (c) memory abilities, and (d) inductive language learning ability. Through factor-analytic studies, it was found that these language skills were the basis for aptitude to learn a foreign language (Carroll, 1962). Carroll's study (1973, p. 278) speculated that "aptitude for foreign language is, to some extent, a residue of first language learning ability".

Pimsleur (1966a; 1968) was a further researcher who also studied student's aptitude to learn a foreign language, and developed a foreign language aptitude test, that was called the Language Aptitude Battery (Pimsleur, 1966b). This test included native-language skill, for example English vocabulary and meta-linguistic skill. A model of language learning by Spolsky (1989) also considered intact language skills such as phonology, orthography and grammar as necessary skills for the learning of foreign languages.

However, there have been further attempts to reconceptualize and refine the aptitude construct and bring it into the domain of current cognitive theory. McLaughlin (1995) suggested that working memory capacity might contribute to the predictive power of aptitude tests. Yoshimura's study (2001) reported that there was a correlation between aptitude test scores and working memory span. Although Miyake and Friedman (1998)
also reported on the role of working memory in aptitude, they claimed that further studies were needed to examine the role of working memory as the central component of aptitude. Working memory was described as the process of memory that was involved in the simultaneous storage and processing of information (Baddeley, 1986, 1990; Harrington and Sawyer, 1992).

Grigorenko, Sternberg, and Ehrman (2000) also developed a new aptitude test known as CANAL-F (Cognitive Ability for Novelty in Acquisition of Language - Foreign). This test examined the learners' ability in (a) acquiring vocabulary, (b) comprehending extended text, (c) extracting grammatical rules, and (d) making semantic inferences. When this test was validated, the results were promising. Other scholars who tried to reconceptualize the aptitude construct were Skehan (2002) and Dornyei and Skehan (2003) who argued that the aptitude model needed to add a new component since there was ongoing research into an understanding of the cognitive processes involved in language learning.

## Some Evidence from the Research Studies

Skehan (1986a, 1986b, 1989) was one of Carroll's followers in developing aptitude research. The Bristol Follow-up Study conducted by Skehan, (1989) was one of the most significant studies in this field. This study showed the relationship between first language development and aptitude for other languages. Skehan's study involved 128 children who were investigated in the first few years of life. Interestingly, after Skehan tested these children a decade later when they had begun learning another language in school, it was found that

Many of the first language developmental measures such as vocabulary size at 39 months or mean length of utterance at 42 months correlated significantly with scores on various aptitude subtests. The aptitude test scores also correlated with home environment measures associated with the development of de-contextualized language. (Ranta, 2008, p. 144)

This finding was consistent with the work of Carroll who posited that language aptitude was a stable trait of an individual. However, there was also a strong indication of the
influence of experience. Thus it was argued that nature and nurture could not be readily separated in the investigation of language learning aptitude.
Skehan (1989) also contended that learners had different aptitude profiles, such as strong, weak, or average for any components of aptitude that in turn, might influence how the learner responded to different types of instruction. However, further research was needed to investigate the interaction between aptitude profiles and instruction.
Initially it was argued that aptitude tests were relevant only in audiolingual and grammar oriented language classrooms. However, aptitude test scores have been used to measure predicted learning outcomes in a wide range of contexts, such as French immersion classes (Harley \& Hart, 1997, 2002), communicative language classrooms (Ehrman \& Oxford, 1995), and laboratory experiments of implicit learning (de Graaff, 1997; Robinson, 1997). Among these, Ehrman's and Oxford's investigation (1995) was an important study. This was because the study was conducted "in the Foreign Service Institute (FSI) context where the MLAT was first trialed" (Ranta, 2008, p. 145). The study found that

The MLAT and an aptitude rating by the instructor were the variables that were most strongly correlated with the FSI ratings of speaking and reading. These proficiency measures correlated with the MLAT as a whole at .50 , which is in keeping with the ranges found by Carroll during the audiolingual era. (Ranta, 2008, p. 145)

Another investigation that added to the body of research was the study conducted by Sparks, Artzer, Ganschow, Siebenhar, Plageman and Patton (1998). This study supported Spark, Ganschow, and Patton's (1995) previous speculation that emphasized the importance of the MLAT as a predictor of skill in foreign language learning. The results of the study conducted by Sparks, Artzer, Ganschow, Siebenhar, Plageman and Patton (1998, p. 207) suggested that

One's performance on standard measures of native-language skill (e.g., reading, vocabulary, group achievement) relates to one's level of foreign language proficiency. Students with higher levels of native-language skill tended to achieve higher levels of oral and written proficiency, and vice versa. Thus, groups of students who show significant differences in oral and written proficiency in a foreign language may also show significant differences in native-language skills. The finding has implications for assessment of potential performance in foreign language classes. Students who have overt or subtle native-language difficulties in reading, writing,
listening, and speaking are likely to experience similar difficulties in learning a foreign language.

The MLAT was criticised by some educators as only having a "focus on analytical and analogical skills and not on the student's potential for the developmental of more global skills needed for communication" in the foreign language (Oxford, 1990: 68). However, from the study by Sparks et al. (1998, p. 207), the results suggested that

The MLAT appears to measure skills that are important for communication, as students with higher levels of both oral and written and both expressive and receptive proficiency in a foreign language achieved significantly higher scores on the MLAT than students who achieved lower levels of proficiency. In both studies, MLAT scores correlated higher with foreign-language proficiency (FL TOTAL TEST) than any of the nativelanguage measures or foreign-language grades. Results suggest the implication that a standard measure of foreign-language aptitude may provide a relatively good indicator of how proficient one may become in a foreign language, at least after two years of studying that language.

Freeman and Freeman (2001) argued for a greater understanding of the factors that operated to influence student school performance and could help teachers in several ways. First, this understanding could keep teachers from blaming themselves, the curriculum, and student ability if students were not doing well. Second, when teachers understood the external factors, they could begin to work for changes that would benefit their students in areas beyond the classroom. Finally, teachers could resist their acceptance of negative stereotypes about minorities, and they could help their students develop positive attitudes towards diversity. This could be done by discussing with students the factors that contributed to their academic success or failure, including the negative attitudes that others might hold toward them because they were members of minority groups. Support from students, parents, and community members were required in creating positive environments for learning.

## Ability

The term 'ability' has been in common usage by psychologists, educators, and other specialists in scientific discussion. Unfortunately, this term seems to be accepted as a term that merely means 'able' or 'can'. However, the term 'ability' means much more than those ideas commonly meant as 'able' or 'can'. Davies et al. in Dictionary of Language Testing (1999) argued that defining and investigating ability is difficult,
undoubtedly because like all constructs, ability could not be observed directly. The term 'ability' was much more general than terms 'achievement', 'proficiency', 'aptitude', or 'attainment'.

Carroll (1993, p. 8) defined 'ability' as
The possible variations over individuals in the luminal levels of task difficulty (or in derived measurements based on such luminal levels) at which, on any given occasion in which all conditions appear favourable, individuals perform successfully on a defined class of tasks.

Moreover, it was stated that
Levels are specified as luminal (threshold) values in order to take advantage of the fact that the most accurate measurements are obtained at those levels. (Carroll, 1993, p. 8)

Furthermore, it was argued that it was necessary to be clear what 'task' meant. A 'task' was defined as

Any activity in which a person engages, given an appropriate setting, in order to achieve a specifiable class of objectives, final results, or terminal states of affairs. (Carroll, 1993, p. 8)

However, since the class of task was more frequently specified as 'cognitive', Carroll (1993) argued that the term 'ability' should refer to the expression "cognitive ability" (p. 9). Assuming that all human beings were genetically equipped with abilities that enabled them to acquire language, this more closely corresponded to the involvement of cognitive abilities that humans had in the learning of language. Carroll (1993, p. 626) proposed that the major characteristics of cognitive abilities were General Intelligence and Fluid Intelligence and involved Reasoning, Induction, and Piagetian reasoning. Moreover, he proposed a further characteristic of Verbal Intelligence involving Language Development.

Carroll (1993) in his major study Human Cognitive Abilities: A Survey of FactorAnalytic studies proposed higher-order factors of ability, including ' $G$ ' or general intelligence. From the survey of research, Carroll (1993) identified the general outline of a three-stratum structure of the major cognitive abilities. He argued that "the analysis of
abilities at several orders and strata offers insight into the structure of abilities and can be the basis for a theory of cognitive abilities" (Carroll, 1993, p. 625) ${ }^{1}$.

Research-based evidence found that stratum III General Intelligence, (factor General Intelligence, G (3G)) dominated a series of broad ability factors at stratum II that could be distinguished as reasoning skill (Fluid Intelligence (2F)), verbal skill (Crystallized Intelligence (2C)), memory (General Memory Ability (2Y)), visual perception (Broad Visual Perception (2V)), auditory perception (Broad Auditory Perception (2U)), retrieval skill (Broad Retrieval Ability (2R)), and processing speed (Broad Cognitive Speediness (2S)). At the lowest level, Stratum I, Carroll (1993, pp. 624-626) identified specific skills that were associated with each of the broad ability factors. Subsequently, Gustafssen (1997) showed that $G$ was strongly related to 2F Fluid Intelligence as reasoning skill with a loading of unity.

## Opportunity to Learn (OTL)

Opportunity to learn (OTL) is considered an important contributing factor in learning. The original concept of opportunity to learn derives from the work of Carroll in 1963. Carroll (1963, p. 3) argued that

Equality of Opportunity to Learn required increasing the amount of instructional time for the least prepared students to enable them to master the curriculum.

The idea behind the Opportunity to Learn index relates to a relatively simple premise:
Learning is to some degree a function of time and effort. Without adequate time on task, no learning is possible. (Gillies \& Quijada, 2008, p. 7)

Benavot and Amadio (2004, p. 4) in A Global Study of Intended Instructional Time and Official School Curricula, 1985-2000, supported this statement by saying that

Pupil achievement increases when students are given greater opportunities to learn, especially when 'engaged learning time' is maximized. Investments in teachers, materials, curricula, and classrooms are wasted if they are not used for a reasonable period of time.

[^0]Husén's (1967) report on the First International Mathematics Study (FIMS) defined 'opportunity to learn' in a straightforward statement:

One of the factors which may influence scores ... is whether or not the students have had an opportunity to study a particular topic or learn how to solve a particular type of problem . .." (p. 162).

However, Floden (2002) argued that OTL could be interpreted in a variety of ways, all of them consistent with Husén 's conceptualisation. Opportunity to learn could be interpreted in terms of how much time or emphasis a topic received in written materials, for example in a prescribed curriculum or a textbook. Opportunity to learn might also be considered as the time devoted to a topic during instruction. The time on a topic could be further explained, for instance, as how much time that a teacher had planned to spend discussing the topic, as the time a teacher actually spent teaching it, or as the time students were truly engaged in learning it.

Studies in the United States applied Opportunity to Learn (OTL) standards to address two core concerns - standards of excellence and accountability for results (Gillies \& Quijada, 2008). Moreover, it was said that the rationale for OTL standards was that

It is unfair to hold students responsible for meeting high academic standards unless they have been assured of an opportunity to learn. If schools lack the resources to teach students the material that will be assessed, then accountability and performance standards can have little impact. (Gillies \& Quijada, 2008, p.7)

The purpose of the OTL standards was
Seek to track whether school quality is adequate to achieve the standards and whether the resources are distributed equitably among schools and districts (Venezia \& Maxwell-Jolly, 2007 cited in Gillies \& Quijada, 2008, p. 7).

The International Association for the Evaluation of Educational Achievement (IEA) was the body that initially used the term OTL to help interpret the achievement of the students that participated in their studies (McDonnell, 1995). These studies indicated that many students had not had the opportunity to learn some of the material on which they were evaluated. Consequently he suggested that interpreting the results had to be made with caution.

IEA also organized The Third International Mathematics and Science Survey (TIMSS) that included a theoretical framework based heavily on the concept of OTL. This study related OTL mostly to the curriculum. Variables related to the students, the classrooms, the schools and the national systems were included in the TIMSS model (Schmidt et al., 1996; Martin and Kelly, 1996). Initially, there were few attempts made to link the data on opportunity to learn gathered in the international assessment studies with student performance. When achievement was examined across countries, there were substantial correlations between learning achievement and opportunity to learn (Floden, 2002).

Grouws and Cebulla (2000) reported that there was a positive relationship between total time allocated to mathematics and general mathematics achievement. The research review on instructional time conducted by Suarez et al. (1991) indicated strong support for the link between allocated instructional time and student performance.

Keeves (1968; 1976; 1994) found a significant relationship across Australian states between achievement in mathematics and science and total curriculum time spent on learning mathematics and science respectively. Cueto, Ramirez and Leon (2006, p. 25) conducted a study in Peru and run an HLM analysis, with the OTL variable in the classroom level. The results showed that

Cognitive demand and adequate feedback have a positive coefficient. Furthermore, cognitive demand and curriculum coverage help reduce the statistical significance of SES. Finally, all three variables explain a large amount of the variability among schools. Thus, this hypothesis is at least partially confirmed and suggests that investing in better OTL for all students might be a way to fight inequality in Peruvian schools and improve student achievement.

## Quality of Instruction

Research and scholarly work have supported further factors that contribute to learning. 'Quality of Instruction', based on the work of Carroll (1963), is such a factor that influences learning. Carroll (1963) argued that quality of instruction promoted student learning. Many educational researchers and educators have explained why increasing quantity and quality of instruction increased student learning.

Carroll (1963, p, 5) argued that
high-quality instruction enables students to better understand what is being taught and increases the likelihood that they will retain the material and be able to build on it.

Moreover, he claimed that
Optimal learning occurs when school provides adequate time for students to learn. (Carroll, 1963, p. 6)

Newman and Wehlage (1993) pointed out that there was a relationship between teacher qualification and student learning. This was because the more teachers' confidence and competence increased, the more quantity and quality of instruction improved, which in turn, influenced student achievement. Brown (1994) emphasized the importance of involving students in the learning process. Brown (1994) also claimed that students learnt best when they took an active role in instruction and when they were encouraged to use higher-order thinking skills. High-quality instruction, which demanded intellectual engagement on the part of students, resulted in greater achievement.

## Perseverance

Millman, Bieger, Klag, and Pine (1983) conducted four experimental studies to test a further deduction from Carroll's model of school learning. The deduction from the model was that if the learner was already willing to persevere to the extent needed for learning, increasing the learner's perseverance would not affect the degree of learning or time needed to learn the task. The four experimental studies indicated that there were no significant differences in the mean learning time between students encouraged to persevere and those not encouraged. It was found that

As often as not, the encouraged students required more time to reach the learning criterion than the not encouraged students.

In his model, Carroll (1963) had predicted such a result. Their perseverance in learning was essential.

## Summary

In this chapter it is argued that the English language serves different purposes in different countries. The English language can be the first language (mother tongue),

National language, a second language, or a foreign language of a country. These differences yield two differences in (a) how the English language is used in certain countries, and (b) how the English language is taught and learnt in certain countries. The learning of English as the first language and as a second language is very different from the learning of English as a foreign language. The first and the second language cases are learnt in an English speaking environment (naturalistic), the latter case is learnt in a non-English speaking environment (formal classroom instruction). This study is undertaken within the context where English is learnt as a foreign language through formal classroom instruction.

While Carroll's model was originally developed for the learning of a foreign language in 1962, it was extended in 1963 as a model of school learning as well as to other learning tasks. Carroll's (1963) model of school learning which comprised five factors was argued to account for variation in school achievement, and particularly, success in the learning of a foreign language. This model is employed as the theoretical framework for this investigation. These constituent factors are aptitude, ability, opportunity to learn, quality of instruction, and perseverance. Carroll's model of school learning has its roots in foreign language learning and has had considerable influence on international educational research in both developed and developing countries.

## CHAPTER 6 <br> THE METHODS OF INVESTIGATION EMPLOYED AND QUESTIONS FOR RESEARCH

## Introduction

This chapter deals with issues related to the methods of data analysis employed in this study. This is a multi-method investigation since this investigation employs several methods of investigation, namely a variety of quantitative approaches as well as qualitative approaches. The study uses interview and focus group discussions (FGD) as primary data and university data files as secondary sources. The statistical analyses of data conducted in this study employ recently advanced techniques and recently developed computer-based methods of storing and analysing qualitative information and data.

In order to investigate the issues raised in Chapter 1, statistical analyses are required: (a) to examine and identify factors influencing students' English language proficiency, (b) to assess English as a single entity, (c) to measure English as a separate skill, (d) to measure change over time, and (e) to compute indices for assessing the performance of students of a university in Indonesia using the scores from the students' Grade Point Average (GPA) and the English Language Proficiency Test (ELPT). This requires that several different computer packages are employed in the analyses. Moreover, information obtained from both the interviews and focus group discussions (FGD) are used to provide more information concerning the results of statistical analyses in order that rich information can be considered.

The issues to be addressed and the types of data collected have to be taken into consideration in performing the data analyses. A number of different methods of analysis need to be employed in order to address the research questions advanced in this chapter. Since secondary data analysis is used in this study, it is necessary and important to discuss this kind of data.

The first part of this chapter presents the methods of data analysis and the reasons for using the different methods followed by an explanation about data collection for the quantitative component as a general case and for the qualitative component as a particular case. A number of steps were required and undertaken before the main data analyses were carried out, including detecting and handling missing values, assessing data normality, and the development of models to examine the idea of influence or effect. The second part of this chapter explains the methods of data analysis employed in this study, such as the use of the Statistical Packages for Social Sciences (SPSS), Partial Least Squares (PLS) path analysis, and AMOS. NVivo is also used for managing the data in the qualitative part of the study. This chapter begins with consideration of the ethics procedures for conducting research that involve people as the subjects of the study, and an institution as the situation in which the study is conducted and for which policy recommendations can be made.

## Ethics

Consistent with the ethical principles of social science research, the researcher is required to follow all of the procedures laid down by the Flinders University Social and Behavioural Research Ethics Committee (SBREC). It is necessary for an application to be submitted to the SBREC for approval to carry out the study by providing a concise summary of the proposed study, including information on the target population, the proposed data collection methods, and the method of obtaining official permission from the authorities of the institution which holds the data. The SBREC application for secondary data collection was approved by the Committee on 30 September 2009, while approval for the qualitative component of the study was sought from the Flinders University Social and Behavioural Research Ethics Committee (SBREC) on 10 June 2010. In seeking this approval the study conforms to ethical and moral norms. The ethical considerations include four aspects.
(1) Participants in the interviews are able to make free and informed choices about whether to participate or not.
(2) All participants in the interviews are invited to sign consent forms and give the researcher permission to carry out the research as specified.
(3) At all times, the identity of individual participants in the interviews is kept anonymous and participants are free to discontinue their involvement at any time.
(4) The researcher transcribes the interview data. Full confidentiality and anonymity are maintained by the researcher.

All data collected from the interviews and for the secondary data analyses are kept anonymous and are stored securely in appropriate ways. Detailed information about secondary data analysis is addressed in Appendix 6.1A.

Husén

## Reasons for Using a Multi-methods Design

There are several reasons for conducting a multi-methods study.
(1) A researcher has both quantitative data and qualitative information, and these two sets of evidence provide a better understanding of the research problem and the associated research questions than either approach by itself.
(2) A researcher has some research questions that cannot be addressed by only one type of information.
(3) A researcher needs to follow up the results of statistical analysis using quantitative data with qualitative information in order to obtain more detailed, rich and useful findings than can be gained from the results obtained using only quantitative procedures.
(4) A researcher may need to embed information from the results of the qualitative phase in a subsequent quantitative study in order to obtain a greater understanding of how the results from the qualitative information collected help to explain the results obtained from the analyses of the quantitative data.

Miles \& Huberman (1994, p. 42) emphasized that "we have a very powerful mix" when combining two different datasets and strategies in a single study.

## Design Procedures

The design of this study derives from premises that a single data set is not sufficient to answer different research questions, tè different types of data are required. In this study,
both the quantitative and qualitative components are two major parts of the investigation and the written report included. This emphasizes that both the quantitative and qualitative data have considerable weight; one is not greater than the other. However, although these data sets have considerable weight, the qualitative data may provide a supportive role in a study based on quantitative data. The quantitative data are examined in greater depth through detailed statistical analysis, while the qualitative data are examined in detail through careful interpretation of the presented information.

In this study, the data collection is conducted using two phases. The two phases are clearly identified in Figure 6.1 that presents the design procedures with the Quantitative processes and the Qualitative processes shown in separate boxes with separate strategies involved. The data collections are conducted independently of each other and presented separately as two phases. However, in this study, quantitative data are assembled simultaneously with collecting qualitative information in order to examine the further results obtained from the quantitative data that are analysed separately. In the later stages of the analyses the quantitative data may be influenced by information obtained from the qualitative component. These strategies are chosen because it may be necessary to use the results of the qualitative analysis in order to support and explain the results of the statistical analysis and vice versa. Moreover, from the qualitative analysis, and from the quantitative analyses findings are obtained that may be important for subsequently making future policy. The design procedures are summarised in Figure 6.1 below.

Figure 6.1 illustrates the use of the two approaches, namely the quantitative approach and the qualitative approach, to investigate factors that influence the process of learning English language proficiency. Thus, the investigation is conducted with the two phases occurring simultaneously. The investigation begins with the quantitative data collection since this is the major investigation, while at the same time organising the qualitative data collection. The quantitative phase examines the stochastic relationships between variables. Since the researcher needs to construct and examine models, the researcher has to estimate the path coefficients, to explain the relationships, as well as subsequently identifying policyoriented recommendations for the future.


QUAN= Quantitative Phase involved
QUAL= Qualitative Phase involved

Figure 6.1 Flow Diagram Depicting the Process for Developing a Conceptual Framework for Research in Learning English as a Foreign Language.

Thus, both quantitative and qualitative data are initially collected, analyzed, and reported separately. However, these two phases may influence each other at the analytical stage, and are combined together in the final reporting stage.

From the specific aims of this study that are stated in Chapter 1 and are related to the four major issues, research questions can now be formulated. These specific
research questions can only be formulated when the context and the setting of the thesis as a policy-oriented research investigation and inquiry that have been presented. These ten research questions are listed below. Each of the ten research questions is directly related to each of the ten specific aims recorded on pages 18 and 19.

## Research Questions Investigated

It is now possible to state the specific research questions that are investigated in this study. The following questions are advanced in order to achieve the general aims of the investigation.
(1) What are the lecturers' of English and students' views concerning the learning of English as a Foreign Language in Indonesia with respect to Carroll's model of foreign language learning?
(2) What factors can be expected to have direct and indirect effects on the learning of English Foreign Language Proficiency at the University?
(3) What student-level factors influence student learning outcomes at the University? Does method of student selection have an influence on student learning outcomes?
(4) How is the English course structured at the University?
(5) Are there interrelationships between variables operating from Time 1 to Time 2, from Time 2 to Time 3, and between Time 1 and Time 3?
(6) Do the components operating at Time 1, Time 2 and Time 3 form or reflect proficiency in English Foreign Language performance?
(7) What changes can occur in reading, writing and listening performance during each semester of a course, and how do they interact and are they related to the teaching that is provided?
(8) What are the effects of the Course on specific changes over time in English Foreign Language Proficiency?
(9) Is English Foreign Language Proficiency better considered and taught as separate skills or as a single entity?
(10) How can policy be shaped to improve the learning of English Foreign Language Proficiency at the University?

The relationships between the four research issues and the ten research questions are presented in Table 6.1, together with information on the corresponding phase involved.

Table 6.1 Information about the Association of the Research Issues and the Methods Employed in this Study and the Research Questions

|  |  |  | Phase |  |
| :--- | :--- | :--- | :--- | :--- |
| No. | General Research <br> Issues | Phase 1 <br> Key Research <br> Questions | General Cases <br> (Data File/ <br> Information) | Phase 2 <br> (Interview Cases <br> Information) |
| 1. | Factors of Influence <br> Questions 1, 2, 3 | $\bullet$ Participant views <br> $\bullet$ Direct and Indirect <br> Effects <br> $\bullet$ Student outcomes | major | major |
| 2. | Change in <br> Performance <br> Questions 4, 5, 6, 7, <br> 8 | $\bullet$ Course Structure <br> $\bullet$ Time <br> $\bullet$ Form or Reflection <br> - Interacting Entities <br> $\bullet$ Treatment Effects | major | minor |
| 3. | Language Teaching <br> Question 9 | $\bullet$ Nature of Entity | major | minor |
| 4. | Shaping Policy <br> Question 10 | $\bullet$ Theoretical and Policy <br> Implications | major | major |

The contributions of the two phases of data collection and the subsequent analyses and reporting carried out are shown with respect to the four major research issues in Table 6.1. In the cells of the table, the magnitudes of the relative contributions of the two approaches, namely the quantitative and qualitative strategies are indicated.

On the completion of the study it is desirable to advance subsequently a comprehensive model for learning English as a foreign language that is relevant to the education of students not only in the University within which the study is conducted but also in similar universities in Indonesia and other Asian countries.

## Secondary Data Collection

## University Data File

For each of the students a simple one page data sheet needs to be prepared to record information about the students that is taken from the data files of the University. This does not require either the students' permission or further Ethics Committee approval,
since the students are only identified by a code number. However, the permission and the authorization of the study by the University involved and ethical issues of interest and importance to the institution were clearly necessary. Table 6.2 A identifies variables available from the University's data files. This table is presented in Appendix 6.2A.

Table 6.2A shows that there are four groups of variables, namely, change variables, student background, academic antecedents, selection method variables, and the outcomes of the course. Change variables comprise three latent variables (LVs), namely PRETEST, NOSTIC, and ELPT ${ }^{\mathbf{2}}$. Each latent variable has three manifest variates (MVs), namely listening, reading, and writing. Student background variables include four latent variables, namely AGE_BEGIN, AGE_END, GENDER, and SES. The LV AGE_BEGIN has one manifest variate, namely age of the student at the beginning of the course. The LV AGE_END also has one manifest variate, namely age at the end of the course. Similarly, the LV GENDER has one manifest variate, namely, sex of the student. The LV SES (Socio-economic Status) has three manifest variates, namely, Focc (Father Occupation), Mocc (Mother Occupation), and Psal (Parent Salary).

Academic antecedent variables comprise three latent variables, namely, PRIOR (prior achievement), ENGL1 (score of English 1), BAHASA (score of Bahasa Indonesia), and YEAR (year in which students enrolled in Bahasa Indonesia). The LV PRIOR contains three manifest variates, namely, Physic, Math, and English. The LV ENGL1 has one manifest variate, namely score of English 1. The LV BAHASA has one manifest variate, namely score of Bahasa Indonesia.

The selection method variables consist of three latent variables, namely SELECT (student selection), FACULTY, and SEMES (semester). The LVs SELECT and FACULTY involve categorical variables. The LV SELECT has five categories, namely, SCHOLAR, ACHIEVE, PMDK, PARTNERS, and SNMPTN. The LV FACULTY has five categories, namely, FMIPA, FTSP, FTI, FTK, and FTIf.

[^1]The outcome of the course has one latent variable, namely, GPA. The LV GPA has one manifest variate, namely, Grade Point Average score. All these data are obtained from the university data files.

## Population for Secondary Data

The available population for this study is (a) all undergraduate students, (b) who enrol in the advanced English (English II course) and have undertaken the English II final test (c) at the University involved, (d) during the period 2007-2009. There are about 4000 students who form the target population with approximately 1000 students taking the English 2 final test each semester who formed the register sample.

## General Methodological Considerations

Careful examination of the data collected needs to be considered before the main analyses are carried out. With reference to the main study, the problems of missing data, data normality, the concepts of influence and effect, as well as levels of analysis are of considerable importance in the discussion that follows.

## Detecting and Handling Missing Values

Two types of data scores are used in the study, namely categorical, and continuous scores. These categorical scale values are considered to be either IRT-scaled or Rankscaled scores in the analyses that follow. Although missing data were considered to be common phenomena in quantitative research studies (Peugh \& Enders, 2004) when some respondents failed or refused to answer certain questions, it was highly problematic in data analysis (Tabachnick and Fidell, 2001). Holt (1997) argued that missing data affected the survey results in two ways: (a) there was an effect due to reducing the achieved sample size, and as a consequence this decreased the precision of the estimates, and (b) there was also an effect due to the fact that non-respondents might differ systematically from respondents, and the achieved sample was no longer fully representative of the original population and this might result in biased population estimates. Therefore, missing data needed to be handled in a systematic way.

In this study, missing data are detected by utilising a data entry program, such as SPSS 18.0, that employs missing value analysis (MVA) programs and routines. Missing value analysis produces the univariate statistics table, which indicates the missing values for each variable. The missing value analysis also provides an option on how to overcome the missing value problem. A number of approaches are proposed in order to handle the missing data problems, namely (a) complete case analysis (listwise deletion), (b) available case method (pairwise deletion), and (c) filling in the missing values with estimated scores (imputations) (Beaton, 1998; Darmawan, 2001; Hair, Anderson, Tatham \& Black, 1995). These techniques are accepted as common approaches for handling missing data (Peugh \& Enders, 2004). Darmawan (2002) and O’Rourke (2003) have listed the advantages and disadvantages for each approach. In this study, listwise deletion is employed because of the requirements of the software used, namely AMOS 18.0 (Arbuckle, 2009). The computer program, namely, AMOS needs to be able to read every entry in the raw data. Therefore, a decision was made after carefully considering the use of the advantages and disadvantages of listwise deletion.

## Testing for the Normality of the Data

This data set contains the manifest variates for each sub-scale involved in constructing the latent variables in the study. Since the main analysis involves different methods and each method requires a different level of stringency in statistical assumptions, the tests for normality are taken into consideration within this context. For the AMOS (Arbuckle, 2009) analyses, normality is generally required, but not for PLSPATH (Sellin, 1989).

Skewness and kurtosis are two indicators that can be used to examine the normality of the data. In normally distributed sample scores, the values of the skewness and kurtosis are ideally zero. Thus, in this study, the skewness and kurtosis values of each variable are examined for an indication of the normality of the data. As a working rule in this study, values of the skewness in the range between -3 and 3 and kurtosis between -8 and 8 are considered acceptable (Kline, 1998). The normality test in this study is carried out using SPSS.

## The Notions of Influence and Effect

This study involves examining the relationships between a number of antecedent variables (such as age of student, sex of student, and socio-economic status of student), and mediators (such as Mode of Student Selection, Faculty, Bahasa, Year, and Semester), both can be considered as independent or explanatory variables that can be said to 'influence', the outcome or dependent variables of English Proficiency (ELPT) and Grade Point Average (GPA). The regression coefficients that are path coefficients in path analysis can be considered to be estimates of 'effect'.

## Level of Analysis

The specification of the levels of analysis is very important in this study. This is because the analyses carried out in this study involve different levels of analysis in one model that are consistent with the data collection (sampling) methods used, to be consistent with the structure of the data and the situation under examination.

Data collected in this study has a hierarchical nature and there are two levels of analysis involved. The first level is the micro level measuring change over time. This is referred to as the intra-student level. The second level is the macro level, and involves the characteristics of the student. This is referred to as the inter-student level. Because the student changed classes, the researcher is not examining students nested within the classes operating at the classroom level.

## Primary Data Collection

## Interviews

An interview has been said to be a controlled conversation in which an interviewer obtained information from the respondent through a series of questions. Interviews were used extensively in education for both selection and clinical research (Keats, 1997). Generally interviews were used as the primary means of obtaining information although sometimes it might also be supplemented by test scores, written reports, and behavioural data.

Keats (1997) argued that good interviewing, whether for selection or for data-gathering, involved integrated techniques which included speaking skills, listening skills, skills of concept acquisition, and skill in the interpretation of verbal and nonverbal messages. A good interviewer needed to have the capacity to show empathy with the respondent. The interviewer should speak clearly, deliver speech at an appropriate pace, and moderate in pitch and volume. Ambiguous vocabulary and syntax should be avoided. A good interviewer should also have the ability to listen actively rather than passively. Active listening was identified by the ability to hear what the respondent said, understand the message, interpret its intent, and demonstrate interest and attentiveness.

Moreover, Keats (1997) added that a good interviewer should also have the capacity to interpret nonverbal behaviour since there were many cultural differences between Western and Asian societies. It was also accepted that cultural norms governed the distance between interviewer and respondent that varied according to the topic, the genders of interviewer and the respondents, the place where the interview was conducted, and the attitudes of the respondent.

## Focus Group Discussion (FGD)

Focus group interviews were a very effective method for collecting data and have primarily been employed by market researchers as a way to solve various problems encountered in market research studies (Goldman, 1962; Tull and Hawkins, 1984). Recently, focus group discussion (FGD) has been widely employed in educational research. There were two reasons why focus group discussion was widely employed. First, Goldman (1962) argued that focus group discussion provided more information that was qualitatively different from that obtained from the individual interview. Second, there were both a wider range of information, and ideas obtained from different respondents in one group at one time than could be obtained from many individuals (Hess, 1968). This was because focus group discussion was intended to create a debate. Goldman (1962) added that there were both greater spontaneity and candour in group discussions. Moreover, there were both a release of group members’ inhibitions, and greater anonymity in group discussions (Hess, 1968).

In addition, O'Donnell (1988) suggested that considerable benefits of collecting data through group discussion were obtained when there were interacting individuals having common interests in one group. Moreover, focus group discussion operated in contrast to the individual interview in which the flow of information was unidirectional. In group settings, the ideas and opinions of each person were considered in an interactive manner among the participants of the group.

## Data Analysis Procedures and Computer Programs

## The Use of SPSS

In this study, the data are initially examined using a statistical program, namely SPSS 18.0. As a first step, descriptive statistics are run for the selected variables to check for missing data and to examine their frequency distributions. As a second step, the shapes of the score distributions are examined using the following indicators: mean, standard deviation, skewness, and kurtosis.

As the next step, SPSS is used for correlation analysis. This analysis aims to investigate the correlations between variables. One of the purposes of this study is to investigate the likely influence of variables on student achievement. The results of the analysis at this stage are obtained using Pearson's correlation coefficient, which is often referred to as Pearson's product-moment correlation coefficient. In addition, SPSS is used for analysing the data to calculate the intraclass correlation using one-way analysis of variance, as well as mean values for use in criterion scaling.

## The Ideas of Path Analyses and Structural Equation Modelling

Byrne (2001) has explained that Structural Equation Modelling (SEM) was a statistical method that employed an exploratory approach rather than a confirmatory approach for the analysis of the hypothesized relationships between variables involving behavioural structural, or attitudinal phenomena that were advanced from observations of the many variables measured. An exploratory approach was a technique that was "mainly used as a means of exploring the underlying factor structure without prior specification of number of factors and their loadings" (Kim and Mueller, 1978b; p. 84). As is explained in greater detail in Chapter 12 the use of PLSPATH (Sellin, 1990) involves the
employment of an exploratory approach rather than a confirmatory approach for the examination of the relationships between variables. Thus, the confirmatory approach is a technique that is only employed where the researcher has prior ideas, from theory and previous research (Manaf, 1995), that the variables are causally related.

Byrne (2001) added that Structural Equation Modelling (SEM) was also called the analysis of covariance structures, latent variable analysis, and involved a process of modelling. Structural equation modelling (SEM) analysis was undertaken to assess the explanatory power of a proposed model as a confirmatory process following the building of a structural model. A latent variable path model was also a structural equation model because each path in the model was represented by a structural equation. Two key features underlying SEM, as an analytical procedure, were (a) that the relations under investigation were represented by a set of structural equations, and (b) that the hypothesized structural relations could be shown pictorially to enable a model for examination that was derived from the theory under study. Having both features, this procedure allowed for the testing of the entire system of variables simultaneously to assess the extent to which the model was consistent with the data. SEM provided an index of the adequacy of the model by estimating the strength of each individual path in the model and examining the direct and indirect effects among variables as well as the fit of the model to the data. The available goodness of fit indices assessed the strength of the hypothesized relations between variables (Byrne, 2001). This procedure was undertaken with the statistical program AMOS 18.0 developed by Arbuckle (2009). AMOS does not use least squares procedures but uses maximum likelihood procedures, analysis of covariance structures and an asymptotic estimation procedure (see Chapter 14 for detail).

## The Use of NVivo

A qualitative data analysis program, namely NVivo 0.9 was developed by Richards (1997) and is used to examine information collected from both the interviews and the focus group discussion. The information collected are the students' views about their learning experiences and the process of learning English, and the lecturers' views about what they plan for teaching their students.

## Summary

In this chapter, issues concerning the strategies of inquiry, the methods of data analysis, as well as the type of information and data examined in this study are discussed. This study employs a combination of a quantitative approach and a qualitative approach. Statistical analysis is the strategy used to analyse the data from the University data files. Carroll's Model of Foreign Language Learning (see Chapter 5) provides the framework for collecting and examining the information obtained from the interviews with staff and the focus group discussion with students using the qualitative approach.

The procedures available for the examination of the data and information collected in this study are considered and their use outlined. In addition, the four major research issues are specified that cover the ten research questions and for which answers are sought. In the chapter that follows the design and operation of the investigation is discussed in detail in order that policy can be shaped to improve the teaching and learning of English in the University in Indonesia in which this study is situated.

## CHAPTER 7 DESIGN AND OPERATION OF THE INVESTIGATION

## Introduction

This chapter describes the population involved in the study, the operation of the study, the source of information and data, the strategies for analysing the data, and the instruments used in this study. The variables described in this chapter are used in the subsequent analyses undertaken in the study in order to examine factors that influence English Foreign Language Proficiency, the effect of the course on proficiency, and examining English Foreign Language Proficiency as separate entities and as a single entity.

It is discussed in Chapter 6 that there are two phases of the study. The first phase involves gathering data for statistical analyses, while the second phase involves gathering information through the individual interviews and focus group discussions. The first phase is conducted using (a) measurement strategies, and the second phase is conducted using (b) interview strategies. These phases are also reflected in detail in the content of the research questions advanced in Chapter 6. It is stated in Chapter 6 that the research questions advanced can be answered by employing the results of statistical analysis, and the examination of information obtained from the interviews. These research questions are derived from the issues and the specific aims that are raised in Chapter 1. Chapter 6 (Pages 130-132) introduces the population employed in the study, the operation of the two phases of the study, and the strategies used in the two phases of the study.

## Population

Gay and Airasian (2000, p. 122) have defined the population in a study to be "the group of interest to the researcher, the group to which she or he would like the results of the study to be generalizable". There are two important points to be made about the population employed in a study. First, the population may be virtually of any size and
may cover almost any geographical area, and the specifically identified population employed is called the 'target population'. Second, the entire group to which the researcher wishes to generalize is rarely available, and the group employed is called the 'accessible or available population'.

The population in this study is defined in accordance with Kish's advice (1965), who said it should contain: (a) content, (b) units, (c) extent, and (d) time. Using these characteristics, the target population for this study is (a) all undergraduate students, (b) who enrol in and complete the advanced English language course and take the English 2 language proficiency test, (c) at the University under investigation in Indonesia, (d) during the period 2007-2009. There were expected to be about 4000 students who would be involved in the study.

Moreover, this study includes lecturers of English, who teach the advanced English language course, at the University under survey in Indonesia, during the period 20072009. There were expected to be six lecturers who would participate in the study. Since there are two phases involved in the investigation, the section that follows discusses how Phase 1 and Phase 2 of this investigation operate.

## Phase 1

## Operation

With respect to the ten research questions advanced in Chapter 6, each of these research questions can be classified into two major groups, namely, major research questions and minor research questions. Phase 1 serves to answer the major Research Questions Numbers 1 to 8, and relates to Issues 1 and 2 that are introduced in Chapter 6. Moreover, the minor Research Questions Numbers 9 and 10 that are advanced in Chapter 6 are linked to Issue 3 and Issue 4 respectively.

## Source of Information and Data

## University Data Files

Phase 1 employs data from the University archives that are used in subsequent analyses in this study. These data are obtained from three sources in the University under survey.

The three sources of data that are used in this study: (a) the University Academic Bureau, (b) the Language Centre, and (c) the Language Laboratory samples drawn from the target population. The three main data sets from the University data files are depicted in Figure 7.1.


## Figure 7.1 Sources of Secondary Data

## University Academic Bureau (UAB) Data

The University Academic Bureau was responsible for recording and reporting academic data. All the University academic data were kept by this Bureau. The Bureau filed information about the students' marks for all subjects taken by the students. The University Academic Bureau data set also provided information about the students' home backgrounds and the information obtained through the use of an on-line questionnaire. Students who participated in the English course were required to fill in an on-line questionnaire before doing each of the tests. The on-line questionnaire was administered and the data recorded were managed by the University Academic Bureau.

## Language Centre Data (LCD)

The Language Centre Data provided information about the results of the English preentry test for those students who enrolled in the English Course at the University under survey. The data that could be obtained from the Language Centre were each student's score in the Pre-entry tests (PRETEST) in Listening, Reading, and Writing (Structure \& Written expression). Therefore, there were three data sets available from the Language Centre, (a) the results on the Listening Comprehension test, (b) the results on the Writing (Structure and Written Expression) test, and (c) the results on the Reading Comprehension test.

## Language Laboratory Data (LLD)

The Language Laboratory provided data that were collected each semester from students of (a) academic year 2006/2007 (even semester); (b) 2007/2008 (odd semester); (c) 2007/2008 (even semester); (d) 2008/2009 (odd semester); and (e) 2008/2009 (even semester) who were enrolled in the English Course at the University under survey. Thus there were data from five semesters analyzed in this study. However, since this study employed explanatory correlational procedures to achieve the purposes of study, the researcher analyzed the data from the three years of testing as if they were collected at one point in time. The data provided information about the results of the Listening Comprehension tests, the Writing (Structure and Written Expression) tests, and the Reading Comprehension tests, which were administered during the five semesters. Examples of each of the three tests are given in Appendix 7.1A

The Language Laboratory data were made available for these analyses from the years 2007 to 2009. There were about 4,000 students who participated in the Listening Comprehension Test, Writing (Structure \& Written Expression) Test, and the Reading Comprehension Test. This means that there were up to 1,000 students who took the tests on each occasion.

With respect to the student data, there are six data sets available from the Language Laboratory, (a) the results of a diagnostic test in Listening Comprehension, (b) the results of a diagnostic test in Writing (structure and written expression), (c) the results of diagnostic test in Reading Comprehension, (d) the results of the final test in Listening Comprehension, (e) the results of the final test in Writing (Structure \& Written expression), and (f) the results of the final test in Reading Comprehension.

## Strategy

## Explanatory Scheme and Notions of Causality

The analyses in Phase 1 are undertaken by employing modelling strategies. There are several models for the analyses. From the variables listed in Table 7.1 a set of explanatory constructs can be developed. These variables are associated with the constructs of
(a) student background,
(b) academic antecedents,
(c) method of selection,
(e) English Foreign Language Proficiency (ELPT) (change variables), and
(f) Grade Point Average (outcome of course)

In seeking to test the relationships that are hypothesized to operate between the constructs an explanatory scheme is employed. The explanatory scheme is "a critical step in the study of causality" (Aldous, 2005, p. 179-181) and the formation of a specific model is undertaken, within a modelling approach to statistics. The explanatory scheme is used to sequence the latent variables given in the path models documented in Chapter 12. The hypothesized explanatory scheme used to develop the path model is presented in Figure 7.2


Figure 7.2 Explanatory Scheme for Learning the English Foreign Language Proficiency Adapted from (Aldous, 2005, p. 181).

Vogt (1999, p. 31) stated the basic principle of causation, influence and effect.
To attribute cause, for X to cause Y , three conditions are necessary (but not sufficient): (1) X must precede Y ; (2) X and Y must covary; (3) no rival explanations account as well for the covariance of X and Y .

This study ascribes causality to the specific relationships under examination in the analyses carried out and reported. More specific models are constructed and each is employed for a different purpose that is related to a specific research question.

## Exploratory Analysis (PLSPATH) - Path Analysis Model

The explanatory scheme and notion of causality is expanded and employed in the next stage of the modelling strategy, namely the exploratory analysis. These analyses are undertaken to examine models and estimate their parameters. Each successive exploratory path analysis model is advanced in order to examine the hypothesized relationships between the manifest variates (MVs) and their respective latent variable (LV) as well as to investigate the relationships between each latent variable and the other latent variables (LVs).

The purpose of this section of the analysis is twofold: (a) to explain the hypothesized models developed in order to test the predicted relationships and the network of effects between variables; and (b) to describe the measurement and operation of each variable to be examined in this study, namely, Methods of Student Selection (SELECT), Faculty of Instruction (FACULTY), and BAHASA, ENGLISH_1, and ENGLISH_2.

Each Path model with a specific English achievement outcome is examined using the data sets available from the three sources, namely, the University Academic Bureau, the Language Centre, and the Language Laboratory. The analyses are carried out using the Partial Least Squares Path Analysis (PLSPATH) computer program developed by Sellin (1989).

## Confirmatory Analysis (AMOS)

Exploratory analysis is subsequently followed up with confirmatory analysis and the use of Structural Equation Modelling (SEM). Structural equation modelling (SEM) is a statistical procedure that takes a confirmatory approach rather than an exploratory approach to the testing of hypothesized causal relationships between variables. Goodness of fit indices assesses the strength of the hypothesized relations between variables. This procedure is undertaken with the statistical program AMOS 18.0 developed by Arbuckle (2009).

## Instruments

Phase 1 employs two types of instruments, namely, (a) online questionnaires, and (b) tests. The instruments used in this study are discussed in the section that follows.

## Online Questionnaire

The questionnaire employed asked questions about the student's personal information. The Questionnaire was designed for all students who were enrolled at the University under survey. The students were asked to state their personal information by writing in the spaces available in the questionnaire. The participants had to provide information on their (a) name, (b) gender, (c) age, (d) method of student selection, (e) students’ prior achievement in Mathematics, Physics, and English, (f) Father's and Mother's Occupations, and (g) Father's and Mother's Salaries. The students were also required to record their university identity numbers in the space provided. The University Academic Bureau had recorded the students' learning outcomes as Grade Point Average (GPA) scores. The Grade Point Average score (GPA) is employed as a criterion variable in the student level analyses. The actual items included in the questionnaire are listed in Table 7.1.

Table 7.1 shows that the questionnaire sought evidence on specific aspects of each student's home background and on specific items. This information together with data from the University files provided the necessary data for use in further analyses.

Table 7.1 Items Available from the University Data Files

| Sources | Label | Name | Data Files |  |  | Occasion |  |  | English Course |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | UAB | LCD | LLD | Time 1 | Time 2 | Time 3 | Course 1 | Course 2 |
| Questionnaire | Student ID | Student ID number | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | Name | Name of the student | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | SEMES | Semester student takes ELPT | $\checkmark$ |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |
| Questionnaire | YEAR | Year student takes Bahasa Indonesia | $\checkmark$ |  |  |  |  |  |  |  |
| Questionnaire | FMIPA | Faculty of Mathematics and Natural Sciences | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | FTI | Faculty of Technology Industry | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | FTSP | Faculty of Civil and Engineering | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | FTIf | Faculty of Technology Information System | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | FTK | Faculty of Marine Engineering | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | GENDER | Sex of Student | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | AGE_BEGIN | Age of student at the beginning of the course | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | AGE_END | Age of student at the end of the course | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | SMNPTN | National Selection | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | PMDK | Invitation | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | ACHIEVE | Achievement | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | SCHOLAR | Scholarship | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Questionnaire | MITRA | Industrial Partnership | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Files Test | Mathematics | Score of Mathematics | $\checkmark$ |  |  |  |  |  |  |  |
| Files Test | Physics | Score of Physics | $\checkmark$ |  |  |  |  |  |  |  |
| Files Test | English | Score of English | $\checkmark$ |  |  |  |  |  |  |  |
| Files Test | Listen_1 | Listening Comprehension |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  |  |  |
| Files Test | Read_1 | Reading Comprehension |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  |  |  |
| Files Test | Write_1 | Structure and Written Expression |  | $\checkmark$ | $\checkmark$ | $\checkmark$ |  |  |  |  |

Table 7.1 continued

| Source | Label | Name | Data Files |  |  | Occasion |  |  | English Course |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | UAB | LCD | LLD | Time 1 | Time 2 | Time 3 | Course 1 | Course 2 |
| Files Test | Listen_2 | Listening Comprehension |  |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |
| Files Test | Read_2 | Reading Comprehension |  |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |
| Files Test | Write_2 | Structure and Written Expression |  |  | $\checkmark$ |  | $\checkmark$ | $\checkmark$ |  | $\checkmark$ |
| Files Test | Read_3 | Reading Comprehension |  |  | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ |
| Files Test | Write_3 | Structure and Written Expression |  |  | $\checkmark$ |  |  | $\checkmark$ |  | $\checkmark$ |
| Files Test | Bahasa | Score of Bahasa Indonesia | $\checkmark$ |  |  |  |  |  |  |  |
| Files Test |  |  |  |  |  |  |  |  |  |  |
| Questionnaire | Focc | Father's Occupation | $\checkmark$ |  |  |  |  |  |  |  |
| Questionnaire | Mocc | Mother's occupation | $\checkmark$ |  |  |  |  |  |  |  |
| Questionnaire | Psal | Parent's Salary | $\checkmark$ |  |  |  |  |  |  |  |

UAB: University Academic Bureau
LCD: Language Centre Data
LLD: Language Laboratory Data

## List of Variables

Table 7.1 shows that the data sets obtained from the University Academic Bureau and the Language Laboratory involved the student level variables with the following names and acronyms in parentheses: National selection (National or SNMPTN) ${ }^{3}$, Interest in Math and Science (Invitation or PMDK) ${ }^{4}$, National or International achievement (ACHIEV), Student under scholarship (SCHOLAR), Business and Industry connection in wider community (MITRA), Male or female student (GENDER), Age of the student at the beginning of the course (AGE_BEGIN), Age of student at the end of the course (AGE_END), Semester in which students enrolled for English 2 (SEMES), Year in which students enrolled for Bahasa Indonesia (YEAR), Enrolment in Faculty of Mathematics and Natural Sciences (FMIPA), Faculty of Industrial Engineering (FTI), Faculty of Technology Information System (FTIf), Faculty of Civil and Planning Engineering (FTSP), Father's Occupation (Focc) and Mother's Occupation (Mocc), Parents' Salary (Psal), Listening Comprehension (Listen), Reading Comprehension (Read), and Writing (Write). The label 1, 2, and 3 for Listen, Read, and Write indicates that there are three different testing occasions. The tests employed are indicated in the second panel of Table 7.1.

National selection or SNMPTN is the acronym for the State University Entry National Selection Procedure. A test was taken by those students who wished to attend a State University in Indonesia. The test was conducted nationally at the same time and on the same day in some nominated cities in Indonesia. Students were allowed to choose which university they wished to attend when they registered. It is hypothesized that the SNMPTN results influence the student's subsequent performance because in Indonesia it is the means by which each state university selects its students.

PMDK is the State University Entry Local Selection Procedure by invitation. It was another way by which a state university selected its students. Local selection in this study meant that a test was undertaken locally by the University under survey. Selection was based on students' interest and performance in Mathematics and Science. The selection was conducted before the national test was carried out.

[^2]ACHIEV is the student selection procedure conducted locally by the University. Students who could demonstrate national or international achievement in education, science and technology, arts or sport were allowed to apply. The University did not carry out a test for this type of student selection. The criteria for this selection were that students must have a high level of achievement in academic work, sport, or art.

SCHOLAR indicates that a local student is selected together with a scholarship. The selection was carried out by the University. There were some criteria which students had to satisfy when they applied for the scholarship. Students who would like to apply for the scholarship needed to be among the best ten students in their high school. Students were required to provide evidence such as a letter from their School Principal explaining that they were chosen as the best ten students in their high school.

MITRA is a local test entry conducted by the University. It was another procedure that the University employed to select its students. Students who had parents or relatives working in business and industry which were the University's stake holders were allowed to apply. It also meant that selection was based on business and industry connections. However, this type of student selection procedure was also offered to the wider community. It meant that members of the wider community who did not have a connection with business and industry were also allowed to apply as long as they were able to pay the necessary fees. Although there was no specific requirement for this kind of student selection, the University set a benchmark. The University administered a local test for this kind of student selection. Since the University had business and industry connections that spread around Indonesia, the test was conducted in some nominated cities in Indonesia. The test was administered before the national test was carried out. The notification of students who passed this test was also published before the national test was administered.

It is important to note that the way the University selected its students also had an influence on the monetary cost incurred by the University and by the students.

GENDER is the sex of a student, whether male or female. In coding the data, a zero (0) is used to indicate a male student and a one (1) is used to indicate a female student.

AGE_BEGIN is the age of a student at the beginning of the course. The information about age of student is obtained from the questionnaire and their entry for date of birth.

The student's age is calculated ages by matching the year of birth with the year enrolled in English 2.
AGE_END is age of a student at the end of the course.
SEMES is semester when the student attends the English 2c classes. Students are allowed to enrol in English 2 after completing English 1. English 1 is conducted during semester I and II. Students who have completed English 1 during semester I are allowed to take English 2 in semester II. The students are allowed to take English 2c at any stage before they graduate. Thus students are allowed to attend English 2c during semester II, III, and IV of their degree. The information about semester when students enrolled in English 2c was obtained from the student questionnaire using the student identity number.

SES is socio-economic status of parents, Focc represents father's occupation, Mocc is mother's occupation, and Psal indicates parents' salary.

## Test

The test materials that were used to assess English Foreign Language Proficiency were obtained from an Item Bank (Umar, 1997) held within Indonesian Universities for their use in similar courses. Test materials in these banks had been extensively field tested and reviewed since the tests were administered previously to test takers who learned English as a foreign language. Thus, the test materials were developed and scaled using a statistical model within the item response theory (IRT) framework (Lord, 1980; Stocking, 1997) to measure each student's performance. In addition to the Rank scaling of Grade Point Average scores, based on performance in courses and areas of study on a scale of 1 to 4, the students' performance on Bahasa Indonesia and English 1 and 2 as well as performance recorded prior to enrolling at the University in the subjects of Physics, Mathematics and English were also recorded in a scale of 1 to 4 as Rank-scaled scores.

However, the scores on English 2 t and on the three English Foreign Language Proficiency Tests, namely PRETEST, DIAGNOSTIC, and ELPT, and their sub-tests of Listening, Writing (Structure and Written Expression, and Reading were developed and scaled using a statistical model within the item response theory (IRT) framework (Lord,

1980; Stocking, 1997) and equated ${ }^{5}$ (Kolen, 1997) across the instruments developed in each area of language skill.

In Appendix 7 the scoring information used in the study to convert raw scores into IRTscaled scores are given in Table 7.2A for 50 item tests for Listening Comprehension, 40 item tests for Structure and Written Expression, and 50 item tests for Reading Comprehension, and the calculation of the total scores is explained in a footnote to the table (from materials provided in the Item Bank). The characteristics of the tests employed in this study by the samples of students for whom scores are obtained from the University data files identified as the Grade sample, are given in Table 7.2. The reduced data employed in the analyses of this investigation with 1978 cases identified as the IRT sample for whom IRT-scaled scores are available, are recorded in Table 7.3.

## Table 7.2 The Characteristics of the Tests for Grade Sample

| Scores | Number of Item | N | Mean | Std. Deviation |
| :--- | :--- | :--- | :--- | :--- |
| Listen 1 | 50 | 4052 | 40.93 | 4.99 |
| Write 1 | 40 | 4052 | 41.66 | 5.32 |
| Read 1 | 50 | 4052 | 42.25 | 5.64 |
| Listen 2 | 50 | 2315 | 46.96 | 5.68 |
| Write 2 | 40 | 2315 | 42.98 | 6.31 |
| Read 2 | 50 | 2315 | 40.52 | 4.73 |
| Listen 3 | 50 | 2376 | 53.78 | 6.03 |
| Write 3 | 40 | 2376 | 47.11 | 6.30 |
| Read 3 | 50 | 2376 | 47.76 | 5.72 |

Table 7.3 The Characteristics of the Tests for IRT Sample

| Scores | Number of Item | N | Mean | Std. Deviation |
| :--- | :--- | :--- | :--- | :--- |
| Listen 1 | 50 | 1978 | 40.72 | 4.93 |
| Write 1 | 40 | 1978 | 41.38 | 5.24 |
| Read 1 | 50 | 1978 | 42.00 | 5.62 |
| Listen 2 | 50 | 1978 | 46.72 | 5.56 |
| Write 2 | 40 | 1978 | 42.82 | 6.11 |
| Read 2 | 50 | 1978 | 40.46 | 4.66 |
| Listen 3 | 50 | 1978 | 53.89 | 5.93 |
| Write 3 | 40 | 1978 | 47.33 | 6.17 |
| Read 3 | 50 | 1978 | 47.85 | 5.69 |

Moreover, the Rank-scaled scores of 1 to 4 for the students' performance on Bahasa Indonesia and English 1 t and $2 \mathrm{t}^{6}$ as well as performance recorded prior to enrolling at the University on the subjects of Physics, Mathematics and English assigned from the

[^3]results of conversion decided by the University under investigation. The conversion table for Rank-scaled scores is given in Table 7.4, and for the total scores in Table 7.5.
Table 7.4 Conversion Table for Rank-Scaled Scores

| Original Scores | Code | Rank-scaled Scores |
| :--- | :--- | :---: |
| $81-100$ | A | 4 |
| $71-80$ | AB | 3.5 |
| $66-70$ | B | 3 |
| $61-65$ | BC | 2.5 |
| $56-60$ | C | 2 |
| $41-55$ | D | 1 |
| $0-40$ | E | 0 |

Table 7.5 Conversion Table for Total Scores

| IRT-scaled Scores | Code | Rank-scaled Scores |
| :--- | :--- | :---: |
| $>550$ | A | 4 |
| $527-547$ | AB | 3.5 |
| $500-523$ | B | 3 |
| $477-497$ | BC | 2.5 |
| $450-473$ | C | 2 |
| $<450$ | D | 1 |

Furthermore, English 2 t , in particular, has two scales, namely IRT-scaled scores and Rank-scaled scores as well as the general code assigned to each score.

In addition, the descriptive statistics for all test scores and Rank-scaled scores used in this study are provided in Appendixes 7.3A, 7.4A and 7.5A.

The team of English lecturers worked hard to select the materials to be used for testing in order that they could also be used effectively in the teaching and learning process. The team provided more than one type of test so that the English lecturers could use different materials with different students at each semester as different students enrolled during each semester. Students who undertook the tests were students who were enrolled in the English Language Proficiency course (English $2 \mathrm{c}^{7}$ ) during a chosen semester.

The test was taken after the English 2c course was completed and the students' performance on this test was used as a condition for graduation in their primary (major) course of study, but was not included in the Final Grade Point Average for their course of study. English 2c classes were conducted for 16 meetings. The first meeting was used for administering a diagnostic test. It was an initial test to asses and measure student English Language Proficiency in Listening, Writing (Structure and Written Expression),

[^4]and Reading Comprehension in order that specific assistance could be provided for those students who were weak in these specific areas of difficulty. The second and the subsequent meetings were used for English language tutorials that emphasized Listening, Writing (Structure and Written Expression), and Reading Comprehension. In addition to these attendances at the 16 classes meetings, students were encouraged to study independently at a Self-Access Centre where they could readily access the materials provided. There they could practise on a Listening Comprehension test with the equipment provided and could obtain a self-assessment score for Listening Comprehension from a scoring guide that was also provided. Similar scores could be obtained for Reading Comprehension and Writing (Structure and Written Expression).

On the day of testing, the English class lecturers work together to administer the tests. As there were generally a large number of students enrolled for each semester, usually 1,000 students, the testing was conducted in parallel class groups. Each class was equipped with a cassette or compact disk and tape recorder that had been checked in order in order that the testing ran smoothly. The administration of the test was carried out by teachers. After the test was finished, teachers had to make sure that the number of answer sheets and question papers in the form of small magazine fit together. If the numbers of them did not match, for example, if one of the question papers is lost, this type of question papers was not used again in order to ensure the validity and the credibility of the papers and the scores that were calculated.

## Phase 2

## Source of Information and Data

Phase 2 involved information obtained from the individual interviews with the lecturers, and the focus group discussions (FGD) with the students.

## Interview

Interviews were used to obtain information from the English staff members. The number of English staff members interviewed at the University was six. The participants were interviewed about their perspectives and views on the processes of teaching and learning English as a foreign language. In undertaking the interviews, questions were employed as a guide, and each of the participants was given approximately from 60 to 90 minutes to discuss and answer these questions.

## Assignment to Focus Group Discussion

The sample for this study was drawn from students who were enrolled in English 1 and English 2c courses at the University. A total of 30 students was considered to be an effective number for the sample. Conducting focus group discussions (FGD) needed a substantial number of students to obtain a variety of views and opinions. There were six focus group discussions with five students in each group providing a total of 30 students involved in the group discussions.

Moreover, there were three sub-groups of students with different levels of proficiency taking part in the six focus group discussions. The sub-groups involved a High Group Level, a Medium Group Level, and a Low Group Level. The levels were determined by the students' score in English language proficiency and students' Grade Point Average. Students' scores in English language proficiency that were obtained from the students' results on the English Language Proficiency Test. Similarly the students' Grade Point Averages were obtained from the University data base.

## Strategy

## Carroll's Model of Foreign Language Learning

Phase 2 was conducted by using the framework provided by Carroll's model of foreign language learning. This framework was developed from research in the field of foreign language learning. Carroll (1963) argued that there were several key factors that had a strong influence on academic achievement. Carroll's model involved five factors, namely, aptitude, opportunity to learn, ability to understand instruction, quality of instruction, and perseverance (with motivation) that had an effect on English Language Proficiency.

In the use of Carroll's model of foreign language learning, aptitude is identified as an explanatory variable, while opportunity to learn, ability to understand instruction, quality of instruction, perseverance and motivation are intermediate variables. Academic achievement is criterion variable. Therefore, there are one input variable, four intermediate variables, and one output variable.

These factors that have an influence on the learning of English as a foreign language and are discussed in detail in Chapter 4. In line with the advancement of technology, the
influence of the use of multi-modal technology in English foreign language learning is also considered.

## Instrument

## A Structured Interview

Phase 2 employed interviews, namely individual interview and focus group discussion (FGD), for obtaining information from the respondents. It was planned that structured interviews were used to collect data related to (a) the views of staff about what and how they planned the teaching of English to the students, and (b) students' views about what lecturers taught and how they taught in the process of learning English as a foreign language.

## Types of Selection Employed

In selecting participants for interviews and the focus group discussion, two types of selection, criterion selection and quota-purposive selection (Gay, Geoffrey, \& Airasian, 2006) were employed.

## Criterion Selection

The interviews involved six staff who were considered to be good informants for the investigation. It was necessary to select staff who were the English lecturers at the University. The number of staff involved in this study was six because only those people who taught English at the University could be involved.

Moreover, there were 30 students who were involved in focus group discussion. These respondents were students who were enrolled in English 1 and English 2, and could meet several criteria, namely, (a) male and female, (b) had the required English language proficiency score, (c) had the required Grade Point Average scores, (d) were willing to participate in the study, and (e) could represent a specific faculty. Criteria for the students who were involved in the focus group discussion is given in Table 7.6.

Table 7.6 Criterion Selection for Focus Group Discussion (FGD)

| Criteria |  | Gender Composition | GPA | ELP |
| :--- | :--- | :--- | :--- | :---: |
| High ELP | High GPA | 1.2 girls +3 boys (5 faculties) <br> 2.3 girls + 2 boys (5 faculties) | High 3.5<X<4.0 | $550<\mathrm{X}<650$ |
| Middle ELP | Middle GPA | 1.2 girls +3 boys (5 faculties) <br> 2.3 girls +2 boys (5 faculties) | Middle $2.6<\mathrm{X}<3.4$ | $450<\mathrm{X}<550$ |
| Low ELP | Low GPA | 1.2 girls +3 boys (5 faculties) <br> 2.3 girls +2 boys (5 faculties) | Low $2.0<\mathrm{X}<2.5$ | $\mathrm{X}<450$ |
|  |  |  |  |  |

## Quota-Convenient Purposive Selection

Since the number of staff and students who were involved in this phase of the study was limited, quota-convenient purposive selection was employed. Quota-convenient purposive selections was used because respondents were chosen for the particular purpose of giving the meaningful information, were still available in the University under survey and were willing to participate in this study. The detailed procedure for selecting cases for focus group discussion (FGD) is discussed in Chapter 10.

## Summary

This chapter deals with how the study is designed and conducted. Two phases of operation, one that is major and the other that is minor, are involved in the study, but they are linked together. These phases are related according to the research questions advanced in Chapter 6 together with the four issues addressed in Chapter 1. The evidence from the two phases are combined together to answer the ten research questions.

The two phases involve two different strategies of investigation, namely, measurement strategies for Phase 1, and interview strategies for Phase 2. In the discussions that follow the results of the interviews are considered first, followed by the results of the analytical strategies. This is because the results of the interviews are required to help to explain the results of the analytical strategies. The results of the individual interviews and focus group discussion (FGD) are reported in the chapters that follow after the discussion of the characteristics of the students involved in this study.

## CHAPTER 8 <br> THE STUDENTS AND THEIR CHARACTERISTICS - THE SCALING OF VARIABLES

## Introduction

This chapter examines the characteristics of the students who are involved in this study. The data available on the students is in the main categorical in nature and is taken from the files held by the university. Categorical variables are ones that contain two or more categories and have distinct separations among the possible values.

Gender is an example of a sampled categorical variable. This variable has two classifications only, male or female. This type of a categorical variable does not require a particular scaling procedure in statistical analysis because a code value for each category of one (1) and two (2) or one (1) and zero (0) can be readily identified.

However, there are many variables that have more than two levels or categories, such as Father's Occupation ${ }^{8}$, Mother's Occupation, Faculty, Mode of Selection, Age, Parent's Salary, and Semester. Father's Occupation and Mother's Occupation may be assessed in such categories as labourer, farmer, fisherman, teacher, clerk, or manager. Mode of University Selection may be assessed as national selection, scholarship, partnership, or science and mathematics. Faculty may be assessed as Marine Engineering, Science and Mathematics, Civil and Planning Engineering, Industrial Engineering and Informatics Engineering. These categorical variables that contain more than two categories sometimes require the use of a particular scaling procedure in order that statistical analysis can be carried out and meaningfully interpreted.

Not only do these data provide information about the students themselves, but they also provide the basis from which many important characteristics are assessed. The characteristics under consideration in this chapter include those of Age at the beginning of the course, Age at the end of the course, Gender, Father's Occupation, Mother's Occupation, Parent's Salary, Mode of Selection, Faculty, and Semester of Study. These

[^5]characteristics like Age and Salary have underlying scales or levels. However, some of these characteristics like Mode of Selection and Faculty do not, even though the data on Salary or Age may be provided in categorical form. All data on the characteristics of the students need to be converted into variables that can be subjected to statistical analysis. This is done by assigning rank-scaled scores or by a procedure referred to as criterion scaling (Pedhazur, 1982, pp 387-392).

These procedures involve specific coding strategies in order that meaningful statistical results can be achieved. The procedure of criterion scaling has not received as much attention in the research literature as other coding strategies such as rank-scaled scores or ordinal scaling (Cohen and Cohen, 1975; Pedhazur, 1982). Consequently, the application of criterion scaling in statistical analysis has not been widely used. This may be because criterion scaling is only employed in the particular circumstances of educational research where an appropriate criterion measure is readily available for use in the criterion scaling technique. Attempts were made to locate the further references to criterion scaling but there are only a few references such as Beaton (1969a; 1969b) as well as Schumacker and Williams (1993). Consequently, it is necessary to provide arguments as to why this procedure is employed in this study. Moreover, different studies have employed slightly different strategies to solve the specific problems encountered in statistical analysis in different situations. Thus, an explanation is provided on how this particular coding technique is employed in this study to solve a statistical problem and the reasons why this technique is employed in this situation.

There are other situations in which rank-scaled scores are employed, and, in general, only the recoding of categories and scores are required, because there is an underlying metric associated with the forming of categories. This is perhaps the most widely employed scaling procedure in education at all levels. It is so widely used that it is commonly an accepted method even in the estimation and calculation of Grade Point Averages. However, while Grade Point Averages (GPA) form a variable in this study these assessment procedures are not discussed further in this chapter.

## Criterion Scaling

Criterion scaling is a technique that is used to resolve a problem when there is a categorical variable or many categorical variables in datasets such as Faculty, Mode of

Selection, Father's Occupation and Mother's Occupation. In each case the data cannot be readily formed into a scale because of the arbitrary natures of the classification of the Faculty and the Method of Selection. Comber and Keeves (1973, p. 198) also argued that criterion scaling was sometimes carried out when there were "substantial proportions of unclassifiable and missing responses". Another reason for conducting criterion scaling is that the creation of dummy variables in an analysis is problematic, particularly when there are many categories associated with a variable and limited numbers of cases involved in the analyses. For a variable that had 12 categories, there would need to be 11 dummy variables in the analysis. This would greatly enlarge the number of categorical independent variables in the data set that would result in an overwhelming number of variables. Thus, Comber and Keeves (1973, p. 198) argued that criterion scaling was very useful since this procedure

Enables scale values to be assigned to categories so as to maximise the relationship between father's occupation and the criterion measures, and also allowed the sometimes substantial numbers of missing and unclassifiable responses to be included in subsequent analysis.

Pedhazur (1977, 1982) and Williams (1977a) employed criterion scaling in the treatment of subject repeated design. Gocka (1973) argued that criterion scaling might also be applied when the data set contained mixed-mode variables such as interval, categorical or ordinal variables that had been criterion scaled. It was also employedwhen a researcher wanted to avoid the difficulties encountered by the use of coded vectors or when a researcher wanted to select the best set of explanatory variables that could be retained to be entered in the form of coded vectors.

However, Beaton (1969b, p. 343) suggested that:
Criterion scaling does not attempt to produce an absolute scale for a factor but instead to scale the factor with reference to an external criterion.

Therefore, after conducting criterion scaling and comparing means between the categories of a variable, the categories of the variable may be assigned different scale values from their original codes. Such recoding may involve collapsing some small number of categories, or variables into one group. Coding techniques in criterion scaling might refer to the coding employed in previous national as well as international studies or may refer to the mean provided as the result of analysis of variance, or possibly regression analysis. The larger mean that a category has, the higher the level to which a
category is assigned. As a result of comparing means between categories, as Pedhazur (1982, p. 388) argued that this might
change in their rank order, when different criterion variables are used in the process of criterion scaling.

From the above comments, it can now be argued that criterion scaling can be employed in several ways, such as: (a) to solve a problem arising from the use of several categorical variables, (b) to select the best set of explanatory variables, (c) to code measures in repeated measure designs, and (d) to handle variables with missing values.

Beaton (1969a; 1969b cited in Schumacker and Williams, 1993, p. 25) was the first person who formalized a strategy for conducting criterion scaling to solve certain problems encountered in multiple regression. If the data contained several categorical variables, criterion scaling could be conducted separately for each variable. Criterion scaling could also be carried out in two ways by using: (a) the mean values of the criterion variables; or (b) the estimated regression weights when the criterion was regressed on the several categories of the characteristic. The former procedure is discussed further in this chapter, while the latter procedure is employed when the data are subjected to analysis using the computer program PLSPATH (Sellin, 1991). The first procedure can be employed by using one-way analysis of variance (ANOVA) in the SPSS package. A criterion variable may assess the performance of the students during undertaking the courses at the university, such as performance in the use of Bahasa Indonesia and English, or alternatively on the completion of the university course such as the student's final Grade Point Average (GPA). Because information on these three outcomes of education are of interest in this study, and also form characteristics of the students under survey, student performance on each of the three outcomes is examined separately and for each of the student characteristics under consideration. Each of the eight characteristics listed above are examined in the pages that follow in this chapter, with consideration given first to the characteristics of Father's Occupation that involves criterion scaling. Detailed analyses are presented in Appendix 8.1A.

## The Scaling of Rank-Scaled Scores

This section discusses the use of rank-scaled scores for certain variables in the study. Rank-scaled scoring is another procedure employed to solve a problem when data
collected are mainly categorical in nature. In this situation, the response categories are ordered, sometimes from a lower level to a higher level, and rank-scaled scores are assigned. Sometimes data are used that have been rank-scaled, for example the use of secondary data where the categories of an individual variable are already rank scaled. Consequently, this procedure is employed when a variable in the dataset is continuous in nature (for example Age), and the researcher may collapse the data into several categories in the form of rank- scaled scores. Efforts were made to try to locate further references to rank-scaled scoring but only a few references could be located, such as Wolf (1997).

There are some situations where a researcher may want or need to reduce or collapse the number of categories of a categorical variable. For example, the results from the use of Descriptive Statistics routines in the SPSS package show that there are some categories that have only a small number of cases in the sample that fall into a particular category (e.g. the variable - for Parent's Salary variable, there are only six people whose salary is more than 10 million rupiah). Because the number of cases in this category is small, this variable cannot be properly used in many statistical analyses. The researcher may recode this category by collapsing or combining this category with another category which has the closest rank-scaled score, and re-label them into a new category, or may relabel them to form a new variable in order to retain the original variable. This collapsing procedure reduces the number of categories of a categorical variable. For example, if the number of the original categories of an independent categorical variable is eight; it can be reduced to five categories as a result of collapsing or combining categories. Moreover, a researcher may combine several categories into one category for research or theoretical reasons (Tabachnick and Fidel, 2001). The procedure of recoding can be done by using the Transform routine in the SPSS package.

After recoding the categories of a categorical variable is complete, the data can be examined by a statistical analysis procedure in order to find which group has the largest mean value. This procedure can be carried out by using one-way analysis of variance (ANOVA) in the SPSS package. Moreover, this procedure can involve comparing the mean scores of two or more than two groups. For example, it may be necessary to compare differences in the mean scores on the dependent variable (e.g. Grade Point Average) across Age categories. After comparing mean scores between categories of a categorical variable, code values, such as $1,2,3,4$, and 5 that identify the level of the
mean scores may be employed. The smaller the means score that a category has, the smaller the code value identified. Furthermore, the larger the mean score that a category has, the higher the code value is given to the category. Although this technique has been assumed to be one of the simplest scaling procedures, surprisingly such a procedure has rarely been used effectively for detecting a relationship between a characteristic and a criterion measure (Walsh, 1997. p. 961), such as the parent's income and the level of English achievement of a student.

## Rank-Scaled and Criterion-Scaled Scoring Procedures

Rank-scaled scores are assigned in this study to the variables of Parent's Salary, Semester, Gender, and Age. However, each of these four variables requires a different approach to the use of rank-scaled scoring, in particular for variable Gender. Generally, rank-scaled scoring involves the following steps in the use of the SPSS package.

1. Run Descriptive Statistics for a categorical variable to examine the frequency distribution and missing data.
2. Run One-way Analysis of Variance with the original categories of an independent categorical variable (for example Parent's Salary) with one dependent variable (for example GPA score).
3. Collapse some categories with a small number of cases into one category and recode into similar codes to the original coding.
4. Run One-Way Analysis of Variance with the collapsed categories of an independent variable with one dependent variable.
5. Interpret the results of analysis by comparing mean scores between groups in order to decide which one is the best performing group.
6. Recode the value of the categories based on the level of mean scores that the categories have. Generally, a smaller value is given to the category that has the smaller mean score and larger value is given to the category that has a larger mean score, but without destroying an underlying scale order.
7. Run One-Way Analysis of Variance based on the new recodes in order to obtain the final results of the analysis of variance.
8. Put codes in order such as $1,2,3$ and 4 to show on a table the final results of the one-way analysis of variance (ANOVA). The code numbers indicate which
groups are the strongest on an underlying scale with respect to a particular characteristic.

However, in some situations these steps cannot be employed for every variable in a dataset. This is because each variable requires a different treatment. The above steps can be employed for such categorical independent variables as Father's Occupation (Focc), Mother's Occupation (Mocc), Modes of Selection (SELECT) and Faculty (FACULTY) if an underlying order has been previously established. However, some variables such as Parent's Salary (PSAL), Age (AGE), and Semester (SEMES) require a different treatment because the categories have an underlying natural order. After recoding the categories of these variables, a researcher still records the categories in the natural order in order to provide a natural meaning. For example, the variable of Parent's Salary is coded according to the ranking of salary the parent has. The smaller code values assigned, the smaller the rank of salary identified. It is important to note that the code values assigned in rank-scaled scoring do not necessarily indicate the level of achievement that the students obtained. This procedure is also employed to treat variables such as Age and Semester in which a small number is assigned for the first rank.

The results of one-way analysis of variance can also be compared to the results of oneway analysis of variance conducted both nationally and internationally, in particular in the way a researcher recodes (scales) the categories of a categorical variable (for example, Parent's Salary). However, there are differences in scaling for each particular country. For example, since the data used in this study are Indonesian university data, it is better to employ scaling that has been established for Indonesia, although this does not guarantee that a researcher obtains the strongest result. Consequently, different approaches can be employed in order that the strongest results are achieved. After running the final one-way analysis of variance, it is usually followed by running a strip correlation between this categorical variable, with the newly recoded values obtained from the results of one-way analysis of variance, and some dependent variables that are under examination such as GPA, Bahasa Indonesia and English scores. It is also possible to state whether or not there is a significant relationship between a categorical independent variable and a continuous dependent variable.

Each one of the four variables, Parent's Salary, Semester, Gender and Age is examined in the pages that follow in this chapter, with consideration given first to the characteristics of Parent's Salary that involve rank-scaled scoring procedures. Further detailed information on criterion scaling and rank-scaled scoring is given in Appendix 8.1A.

## Relationships of the Eight Characteristics in the Three Performance Outcomes

From the examination of the detailed results that involve (a) criterion scaling, and (b) rank-scaled scores that are relocated in an Appendix 8.1A, this section summarizes the relationship of the characteristics of the students involved in the study with respect to three performance outcomes. There are eight characteristics or eight variables under consideration: (a) Age, (b) Gender, (c) Father's Occupation, (d) Mother's Occupation, (e) Parents' Salary, (f) Mode of Selection, (g) Faculty, and (h) Semester of Study.

The eight variables examined in this section that are associated with the characteristics of students are related to the three outcomes or criterion variables assessing performance, which are classified into two groups:
(a). performance in a language during the course
(i) Bahasa Indonesia,
(ii) English 2t;
(b). performance with respect to GPA on the completion of the course.

However, before the final results are presented, there are several statistical procedures that have to be carried out in order to achieve meaningful findings. There are three main steps that are necessary: (a) collapsing categories, (b) conducting One-Way Analysis of Variance (ANOVA), and (c) examining the relationships with the characteristics of groups of students. As is explained above the data employed for these characteristics in this study are, in the main, categorical in nature. Each of the independent categorical variables has several categories. Inevitably, some of the categories of a variable have a small number of cases. In order to obtain the most meaningful results from the statistical analysis, it is necessary to combine groups with a small number of cases into fewer categories. This reduces the number of categories for certain variables. The calculation of the product moment correlation (r) and the intra-class correlation ( $\rho$ ) are coefficients that are used to compare the variability in the scores between the different groups.

Finally, it is necessary to examine the relationships between variables under consideration and variables of student's performance during the course, on Bahasa Indonesia and English, and performance with respect to GPA on the completion of the course. Table 8.1 records the intra-class correlations (rho or $\rho$ ) that are obtained to test the significance between categories in the analyses of variance that are reported in greater detail in Appendix 8.1A.

Table 8.1 Eight Characteristics of Students and their Scores in Bahasa Indonesia, English and GPA

| No | Eight Characteristics of Students $(\mathrm{n}=5597)$ | Bahasa Indonesia $\rho$ | r | English 2 |  | GPA |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Father's Occupation | $\begin{aligned} & 0.0005 \\ & \text { not sig. } \end{aligned}$ | -0.008 not sig. | 0.018 | $\begin{aligned} & 0.001 \\ & \text { not sig. } \end{aligned}$ | 0.003 | 0.027 not sig. |
| 2 | Mother's Occupation | $\begin{aligned} & -0.0001 \\ & \text { not sig. } \end{aligned}$ | 0.006 | $0.009$ | -0.008 | 0.003 | $0.034$ |
|  |  |  | not sig. | sig. | not sig. | sig. | not sig. |
| 3 | Mode of Selection | $\begin{aligned} & 0.004 \\ & \text { sig. } \end{aligned}$ | 0.036 | 0.009 | -0.046- | 0.042 | 0.170 |
|  |  |  | not sig. | sig. | not sig. | sig. | sig. |
| 4 | Faculty | $\begin{aligned} & \mathbf{0 . 0 3} \\ & \text { sig. } \end{aligned}$ | 0.154 | 0.073 | 0.220 | 0.04 | 0.174 |
|  |  |  | sig. | sig. | sig. | sig. | sig. |
| 5 | Parent's Salary | $\begin{aligned} & 0.001 \\ & \text { not sig. } \end{aligned}$ | -0.033 | 0.041 | 0.183 | 0.001 | -0.040 |
|  |  |  | not sig. | sig. | sig. | sig. | not sig. |
| 6 | Semester | $\begin{aligned} & \mathbf{0 . 0 6} \\ & \text { sig. } \end{aligned}$ | 0.162 | $\begin{aligned} & \mathbf{0 . 0 1} \\ & \text { sig. } \end{aligned}$ | $\begin{aligned} & 0.088 \\ & \text { not sig. } \end{aligned}$ | - | - |
|  |  |  | sig. |  |  |  |  |
| 7 | Year | $0.054$ <br> sig. | 0.17 | - | - | - | - |
|  |  |  | sig. |  |  |  |  |
|  | Gender | 0.02 | 0.11 | 0.006 | -0.058 | 0.06 | 0.180 |
|  |  | sig. | sig. | sig. | not sig. | sig. | sig. |
| 8 (a) | Age (initial stage of the course) | 0.002 | -0.03 | 0.015 | -0.105 | - | - |
|  |  | sig. | not sig. | sig. | sig. |  |  |
| (b) | Age (at the end of the course) | - | - | - | - | 0.08 | -0.25 |
|  |  |  |  |  |  | sig. | Sig. |

not sig. $=$ not significant at $5 \%$ level, significant at $5 \%$ level $r>0.06, \rho=$ intraclass correlation, $\mathrm{r}=$ product moment correlation

Table 8.1 presents the findings for the eight characteristics of students with respect to their performance in Bahasa Indonesia, English 2t and GPA. The discussion begins with respect to the language performance at the initial stage of the university course, namely, Bahasa Indonesia and English, and concludes with respect to GPA on the completion of the university course.

## Bahasa Indonesia

With respect to performance in the learning of Bahasa Indonesia, there are no significant product moment correlations (r) between the coded values and performance for Father's Occupation, Mother's Occupation, Parents' Salary, Mode of Selection and

Age of student at the time of taking the test. However, there are significant relationships for three characteristics.
(1) Faculty, - Informatics Engineering is the highest performing group and Marine Engineering is the lowest.
(2) Semester, - those students learning Bahasa Indonesia in the later years generally do better than those learning Bahasa Indonesia in the earlier years.
(3) Gender, - girls do better than boys in the learning of Bahasa Indonesia.

From the results of the one-way analyses of variance the intraclass correlations ( $\rho$ ) indicate that in the learning of Bahasa Indonesia there are no significant differences between groups with respect to Father's Occupation, Mother's Occupation and Parent's Salary. However, there are significant differences between groups with respect to five characteristics.
(1) Mode of Selection, - Industrial Partnership is the lowest performing group.
(2) Faculty, - Informatics Engineering is the highest performing group and Marine Engineering is the lowest performing group.
(3) Semester, - the students learning Bahasa Indonesia in Year 4 perform at a higher level than students in other years.
(4) Gender, - girls perform slightly better than boys in learning Bahasa Indonesia.
(5) Age, - the oldest group of students perform noticeably lower in Bahasa Indonesia than the other age groups.

## English 2t

For performance in the learning of English 2t, the results of the product moment correlations (r) indicate that student performance is not significantly related to (a) the Occupations of the Fathers and (b) Mothers of the students, (c) Mode of Selection, (d) Semester when students enrol in English 2c, and (e) the Sex of the students. However, there are significant relationships for (a) Faculty, - Informatics Engineering is the best performing group and Mathematics and Science is the lowest, (b) Parent's Salary, - rich students generally do better than poorer students do, and (c) Age, - younger students generally have better language skills both in English, as well as in Bahasa Indonesia.

Furthermore, the results of the one-way analyses of variance with performance in English 2 t as the criterion variable indicate that there are significant differences between groups with respect to eight characteristics.
(1) Mother's Occupation, - Clerical is the highest performing group, and Labourer is the lowest performing group.
(2) Father's Occupation, - Managerial and Professional is the lowest performing group, and Clerical and Self-employed is the highest performing group.
(3) Mode of Selection, - Other is the highest performing group and Invitation is the lowest group.
(4) Faculty, - Informatics is the highest performing group, and Mathematics and Science is the lowest performing group.
(5) Parent's Salary, - the student whose parent's salary is between 7.50-10.0 and $>10.0$ is the highest performing group, the student whose parent's salary is $<0.25$ and $0.25-0.50$ is the lowest performing group.
(6) Semester, - the students learning English in Years 1 and 2 perform at a higher level than students learning English in later years.
(7) Gender, - male students have stronger language skills in English than female students.
(8) Age, - the younger groups of students perform better than the older groups of students.

## GPA

The evidence provided in Table 8.1 for the product-moment correlation (r) shows that student performance on the completion of the university course does not relate to the Occupations of the Fathers and Mothers of the students as well as Parent's Salary. However, there are four student characteristics that show significant relationships, namely: (a) Mode of Selection (Other is the better performing group when compared to the other three groups, namely, National Selection, Industrial Partnership and Invitation); (b) Faculty, - Marine Engineering is the lowest performing group and Informatics Engineering is the best performing group; (c) Gender, - girls do better than boys; and (d) Age, - older students perform at a lower level than the younger groups of students.

In addition, the results of the one-way analyses of variance as is indicated by the intraclass correlation ( $\rho$ ) indicate that there are significant differences between groups with respect to seven characteristics.
(1) Father's Occupation, - Labourer is the lowest performing group and SelfEmployed is the highest performing group.
(2) Mother's Occupation, - the Labourer group performs at the lowest level and the Self-Employed group performs at the highest level.
(3) Mode of Selection, - Other is the highest performing group and Industrial Partnership is the lowest performing group.
(4) Parent's Salary, - the lowest income group is the highest performing group and the highest income group is the lowest performing group.
(5) Faculty, - Marine Engineering is the lowest performing group and Informatics Engineering is the highest performing group.
(6) Gender, - girls have better performance than boys.
(7) Age, - the youngest groups of students perform noticeably better on the completion of the course than the other age groups.

## Summary

In the chapters that follow these characteristics are examined further in the relationships between them and their influence on the learning of Bahasa Indonesia as the national language of Indonesia, and their performance in English as the language of international communication, as well as the student's Grade Point Average at the end of the course. These different characteristics and the different aspects of the course are interrelated. Therefore it is important to investigate the effects of these characteristics in more rigorous ways using three different statistical procedures that are able to estimate regression weights when the criterion is adjusted for the effects of other variables that involve other significant characteristics. This regression analyses procedure is undertaken by using two different computer programs, namely, PLSPATH, and AMOS.

Before discussing the results of the statistical analysis of the data, it is necessary to consider the information obtained from the interviews conducted with the lecturers of English, and focus group discussion (FGD) conducted with the students. It is expected that information obtained from the interviews and focus group discussion (FGD) will provide information that is necessary to interpret and explain the findings of the statistical analyses.

## CHAPTER 9 LECTURERS' VIEWS CONCERNING THE LEARNING OF ENGLISH AS A FOREIGN LANGUAGE

## Introduction

This investigation involves a policy-oriented approach to research and employs both qualitative and quantitative methods of analysis as are appropriate for the examination of the information and data that are obtained both from primary and secondary sources. This investigation also employed multi-methods analysis, with a focus on the advancement of the policies and practices involved in the teaching and learning of the English language in an Indonesian University that are included in the education of students in order to work in the fields of Engineering and Information and Communication Technologies (ICT). This chapter seeks to investigate the factors that influence the teaching and learning of English Language Proficiency from the perspectives of the lecturers.

Information was obtained from face to face interviews involving six lecturers in this part of the investigation. The information gained from the six people interviewed provide each lecturer's views on: (a) the teaching and learning of the English language; (b) reasons why the teaching and learning of English is necessary; (c) the relevance and importance of English to the lecturer's professional duties; as well as (d) their experiences in the teaching and learning of English.

This study involves the learning of the English language as the most powerful language in the world. Students around the world, including those in Indonesia and some other Asian countries such as China, Thailand, Korea and Japan, learn English as a foreign language. While people in some parts of the Asia, such as Hong Kong, India, and Singapore, learn English as their second language since they live in English speaking settings. However, some students find it easy to learn English as a foreign language, while other students are struggling to learn English as a foreign language. A complex set of factors are thought to contribute to the reasons why some students are able to learn English more easily, while other students are not.

Factors such as aptitude, perseverance, opportunity to learn and ability to understand instruction as well as quality of instruction are among these factors (Carroll, 1962; 1989). In this investigation, these factors are used as a guide to structure the interview questions in order to obtain information from lecturers about their views on the teaching and learning of English. The interview questions were designed and employed in such a way that these questions are able to provide rich and accurate information on lecturers' views on how they teach English and how their students attain proficiency in the use of the English language.

The world is changing rapidly. The rapid development of Information and Communication Technologies requires that people are literate not only in English but also in ICT and other forms of technology. Therefore, the skills of multi-literacies, and not a single-language, are required in order that people become globally literate in the modern world. This is because there is a strong relationship between English and technology. English is the language required to access technology. The computer and the internet employ English as their code language. If people do not master English, they are less likely to be able to access computer-based technology. Consequently, this study also explores whether the students have the opportunities to learn English as well as modern computer-based technological tools. This information can provide new understandings into how English can best be learnt in the current technological era, particularly in those situations in which English is learnt as a foreign language, and students do not have opportunities to practise the use of English in daily life.

This chapter presents the findings and discusses the results of the analyses regarding the factors that influence the attainment of English Foreign Language Proficiency and the strategies that help foreign language learners to become proficient in English. The views and perspectives of the lecturers obtained from interviews are documented and examined. These perspectives are structured and analyzed with respect to the factors in Carroll's model of language learning and compared with other relevant literature. This chapter begins with the statement of the relevant research question and is followed by restating the purposes of this aspect of this study.

## Research Question

This section of the investigation was designed together with other issues to answer the specific research question:
a. What are the lecturers' views and experience concerning the learning of English as a Foreign Language in Indonesia with respect to Carroll's model of foreign language learning?

## The Purposes of the Study

This section of the study is guided in part by two general aims, namely, (a) to investigate the relationship between the five factors of Carroll's model of language learning and the acquiring of English foreign language proficiency in Indonesia, and (b) to help explain some of the results of the quantitative study presented in subsequent chapters in order that some of the policies involved in the conduct of the courses can be examined.

## The Characteristics of Learning English as a Foreign Language

The study involves respondents operating at two levels, namely, the lecturer and student levels. Carroll's model of foreign language learning (see Chapter 5) is employed to design the interview questions for lecturers and students. The following factors have been identified in Carroll's model as the keys characteristics that influence the development of English Foreign Language Proficiency.

These factors are discussed in this chapter under the following headings:

1. Aptitude
2. Perseverance
3. Opportunity to Learn
4. Ability to Understand Instruction
5. Quality of Instruction

Carroll's five factors are used as organizers of the information obtained to examine if these five factors are sufficient to explain the characteristics that this study considers to be required to influence the attainment of English Foreign Language Proficiency in the course provided by the University under investigation. The use of Carroll's model for designing the interview questions is considered in the section that follows. The section starts by discussing the questions in the interviews at the lecturer-level.

## Designing Interview Questions: Lecturer Level

Table 9.1 summarizes how Carroll's model is employed to design interview questions for lecturers. It can be seen in Table 9.1 that one interview question can represent more than one of the five factors that influence English Foreign Language Learning proposed by Carroll (1962; 1989). Numbers 1, 2, 3, and 4 as well as 5 recorded in the column
headed 'Carroll's Model' represent the number of each of the five factors examined by Carroll in his international studies of language learning.

Table 9.1 Interview Questions for Lecturers

| Trigger Questions | Carroll's Model |
| :---: | :---: |
| 1. How easy do you find it to learn English | 1 Aptitude |
| 2. Do you think it is necessary to learn English? Explain! | 2 Perseverance |
| 3. What is the relative importance in your discipline of being able to read, write and speak English? | 2 Perseverance <br> 3 Opportunity to Learn <br> 5 Quality of Instruction |
| 4. Describe your experience in learning English or what was your experience in learning English? | 3 Opportunity to Learn <br> 4 Ability to Understand Instruction <br> 5 Quality of Instruction |
| 5. How could the English Language course be adapted to better meet the learning needs of students at the University? | 4 Ability to Understand Instruction |
| 6. What could you do to assist students learn English? | 5 Quality of Instruction |
| 7. What opportunities (if any) do you provide students within the University to read, write or talk in English? | 3 Opportunity to Learn <br> 5 Quality of Instruction |
| 8. How is technology used to <br> (a) learn the subject matter of the student's discipline, <br> (b) learn English <br> 9. Why is technology used in the learning of English? | 3 Opportunity to Learn <br> 5 Quality of Instruction |

There are nine interview questions advanced for the lecturers to answer. The focus of the interview is on the lecturers' views and perceptions of the teaching and learning of English as a Foreign Language.

## The Results of Analyses

## Findings from Interviews with Lecturers

## Dimension: Aptitude

## Question: How Easy do You Find it to Learn English?

Aptitude can be defined as the speed of language learning in specific situations (Carroll, 1962). Under some circumstances, such as in the situation in which an investigator wants to obtain information about aptitude in foreign language learning, an appropriate way to ask about aptitude in language learning is by questioning if the learner finds the learning of the language easy, and when is it easy for a learner to learn a foreign language.

From the data collected through the interviews, some factors that contribute to how easy it is for a learner to learn English are when they have a good attitude towards learning

English, and when they have family support as well as their own personal interest. Table 9.1A gives a detailed summary of the lecturers' responses on the factors that influence the speed of language learning. Table 9.1 A is presented in a separate volume containing the Appendixes that is a supplement to the main thesis and is provided as a separate volume in order to facilitate easy reference to the content.

Table 9.1 A records the results of the interviews on the speed of learning language or aptitude. In Table 9.1 A , aptitude is reported in the column 'dimension'. From the interviews with the six lecturers, there are 16 theoretical categories that contribute to how easy it is for a learner to learn the English language in situations where English is taught as a foreign language. The categories are based on the ideas given by the respondents from the results of the interviews that are transcribed. From the transcripts of the interviews, it is an investigator's responsibility to identify a key word in what the respondent says. Each appropriate key word emerges as a category in this study.

These 16 theoretical categories are reported and discussed together with comments that support why particular indicators are classified into a particular category. In this section, the indicators signify what the respondents say about the learning of English. The 16 categories are (a) enjoyment, (b) persistence, (c) importance, (d) self-efficacy, (e)selftaught, (f) parental support, (g) practice in different context, (h) length of practice, (i) status of the language, (j) friend, (k) supportive environment, (l) access to resources, (m) teacher, ( n ) no-nativization, (o) initiative, and (p) knowledge of language.

## Enjoyment

The results of the interviews indicate that all six respondents find it easy to learn the English language when they enjoy learning English, when the learner likes English as well as when they like learning knowledge of the language, namely, grammar and structure.

One of the respondents reported why she likes English.
Learning English is pleasure. I enjoy learning English. (Jasmine Interview: NVivo Reference 1)

The statement indicates that enjoyment is likely to contribute to the speed of learning English.

## Persistence

The qualities of defining aptitude or speed in learning language are the fact that five out of six respondents never give up learning English.

A respondent commented that
Learning English is not easy, but I have never given up to learn it. If I don't have a book, I visit library to borrow some books or borrow a book from my neighbour to copy some pages and I learn it at home. (Pluto Interview: NVivo Reference 1)

This statement indicates that learners are likely to improve their skills in English if they are persistent in learning English. The learning involves a desire to learn, putting in effort to learn English and never giving up learning English.

## Importance

Six out of six respondents show that the importance of English advances their motivation to learn English.

A respondent commented that
Since I realize that English is very important, I try hard to improve my skills in English. (Pluto Interview: NVivo Reference 1)

This statement indicates that awareness of the importance of English is likely to help the speed of learning the language.

## Self-Efficacy

The results of the interview indicate that all six respondents revealed their level of confidence in learning English.

A respondent reported that
I feel confident that I can learn English. (Mercurius NVivo: Reference 1).
This statement shows that feeling of confidence in learning English is likely to contribute to the speed of learning the language.

## Self-Taught

Information obtained from an interview indicates that a participant found it easy to learn English when he was self-taught. He said that he was self-taught in learning English. A respondent commented that

I did not go to senior high school. I did not learn English in senior high school. However, for me, learning English is easy. It was because I learned it autodidact. I taught myself English. I read the concept, for
example about grammar and structure, until I understood what the concept was about. I checked my understanding by practising some exercises. If I got the answer right, it meant that I understood. (Pluto Interview: NVivo Reference 1)

This statement shows that self-taught is a way that makes a learner find that it easy to learn English. This learner is a self-starter who sustains his intrinsic motivation that makes learning easier for him. He has an intrinsic interest in the task and conducts selfevaluation to check whether or not his understanding of a concept is correct.

## Parental Support

The role of parents is one factor that has an influence on language learning. Although parents do not have a direct role, such as coaching or supporting student's learning, an indirect role, such as providing facilities and paying for an additional English course for their children, helps improve how learners work to learn English.

One respondent said that
I take a private English course and my parents support me by paying the course fee. Although this is basically my initiative for taking a private English course, my parents have role in supporting my study. My parents also provide me with some English books that I can learn independently. (Saturn Interview: NVivo Reference 1)

This statement describes the important role of parents, although indirect, in supporting their children learning English.

## Practice in Different Contexts

The important part of learning theoretically is when a learner is able to practise in different contexts. It is recorded in Table 9.2A that respondents learn English easily through (a) teaching others, (b) practising speaking, (c) practising reading, (d) practising listening, (e) singing, (f) practising some test strategies, and (g) practising doing different test items in English.

All of the six respondents reported that they found it easy to learn English when they taught English to others. The six respondents indicate that having a job as a lecturer of English helped them improve their English since they had more opportunities to use English and the opportunity to learn English through teaching, developing the latest teaching methods as well as undertaking evaluation. One respondent reported that she had conducted pre-service teaching at high school during study at the university. This teaching experience helped her learn English.

One respondent reported that

> When I was studying in university, there was an opportunity to involve in preservice teaching. I felt that I was able to implement the theories and knowledge of English that I obtained from my study in university to teaching practices. This opportunity forced me to learn English and to prepare English materials before teaching. I had an opportunity to apply my knowledge to teach students English. This opportunity also helped me improve my English as well as the way how the theory can be implemented into practice. There is a positive side from these practices which helps me learn English easily. Moreover, I also taught at high school during my study. I also have got a job as an English lecturer. (Rose Interview: NVivo Reference 2)

The result of the interview indicates that learning English through the process of teaching English to others is likely to help learners learn English easily. Moreover, teaching practices provide opportunities to implement the ideas in practice. Moreover, more opportunities can be obtained when respondents have a job as a lecturer of English since they have to teach, prepare materials and learn the theory, knowledge or materials first before teaching in order to implement them in practice.

## Length of Practice

Another factor that has an influence on how easy a learner finds it to learn English is length of practice. Length of practice can be defined as the number of years of exposure to English. Longer time for learning English means that learners have more time and more experience in learning English that helps them acquire English easily. Table 9.2A displays that the length of learning English, more experience for learning English and longer processes for learning English contribute to how English can be learnt more readily.

A respondent commented that
I learn English as a foreign language. It takes time, and not short time, to learn English. I learn English for many years. I feel that the longer we learn English, the more vocabularies increase. The longer time we learn English, the more grammar and structure we understand. This helps me learn English easily. (Sun Flower Interview: NVivo Reference 1)

This statement indicates that the greater the learning of vocabulary, the easier the respondent finds learning English. Similarly, the greater the length of time involved in learning English has an influence on the understanding of grammar and structure that in turn, makes English easier to learn.

## Status of the Language

The English language serves different roles in different countries. In some countries, English is identified as the first language, while in other countries English is identified as the second language. The first language in some countries is also the home language or mother tongue. The second language is a language, whether in reality a second, third, or fourth, that is learnt sometime later after the first language has been acquired, and there are many opportunities to use the language. In such countries the second language is used actively together with the first language. Some parts of the world, such as Indonesia, Korea, Thailand, China and Japan identify English as a foreign language. Generally, a foreign language is a language that is learnt at school and a part of the curriculum. However, there is little opportunity to use the language.

The process of learning English as a foreign language is different from the process of learning English as a first or a second language. Learning English as a foreign language takes more time and involves a longer process. Lack of opportunity to learn and lack of opportunity to use the language make a learner find it difficult to learn the language. The results of the interviews recorded in Table 9.2A show that types of language contribute to how easy a learner can learn the English language. Only one out of the six respondents reported that English in Indonesia is learnt in situations in which English is taught as a foreign language, not as the first or the second language. It is a language that is learnt only in the classroom with little opportunity to use the language as a means of communication. It is a language that is not used as a medium of academic instruction; is not used as a language for doing business and commerce; as well as is not being used as the language of the government of the country. Moreover, English is a language that is not used for literary writing and a language that is not used in the court. It is strictly a foreign language that is initially learnt for passing a test.

A respondent commented that
I find it difficult to learn English because it is a foreign language, not my mother tongue, and not my second language. I only learn it at school and I have never used it as a means of communication in daily life. (Rose Interview: NVivo Reference 2)

This statement indicates that the status of the language learnt has an influence on how easy it is for a learner to learn English. Moreover, the statement provides a key characteristic of how English as a foreign language is taught and learnt. The process of
learning English as a foreign language takes place in the classroom setting which involves teaching with little opportunity to use the language.

## Friends

The results of the interviews show that only one out of the six respondents finds it easy to learn English when he has friends with whom to practise English.

A respondent commented that
Moreover, the availability of friends or peers helped me learn English easier. It was because I had a partner to practise speaking. For speaking, it is better to do a real conversation with a friend. (Saturn Interview: Nvivo Reference 3)

This statement indicates that the availability of peers is likely to provide opportunities for learners to use English.

## Supportive Environment

The results of the interviews show that a supportive environment is very likely to influence how easily English is learnt. Information obtained through the interviews indicates that it is easier to learn English when a teacher provides a comfortable learning situation.

A teacher provides relax environment and I feel free to express my ideas. (Jasmine Interview: NVivo Reference 1)

This statement shows that a comfortable environment is likely to provide the opportunity for learners to express their ideas that in turn help them to learn English easily.

## Access to Resources

## At School

The results of the interviews indicate that the availability of facilities such as a computer and the internet, as well as books at school helps a learner to learn English more easily. A respondent commented that

The availability of a computer, books and the internet at the university enabled me to add to my knowledge and information in English. I read news in English from the internet. I use my computer to access information from the internet. I read a textbook written in English. These facilities help me improve my English since everything is written in English. (Saturn Interview: NVivo Reference 5)

This statement shows that access to resources at school is likely to contribute to success in learning English.

## At Home

Home Resources is another factor that is more likely to contribute to how easy a learner finds it is to learn English. The availability of books, journals, literature, novels, computer, internet, audios, CD, DVD, cassette, tape recorder and TV channels may have an influence on the speed of English language learning.

A respondent said that
I have got a job as an English lecturer. I am able to afford some resources that I can use to help me cope with my English. The availability of facilities at home such as novels, journals, TV Channel, CD, DVD, cassette, tape recorder, computer and internet helps me learn English easily. (Mercurius Interview: NVivo Reference 1)

This statement shows that the availability of home resources is likely to help learners acquire English more readily.

## Teacher

The results of the interviews indicate that one important aspect in language learning is the availability of a teacher. In this situation, the teacher does not always mean a teacher in the classroom in the formal learning situation, but a teacher can be an adult who has already understood how a language is structured and this person is able to transfer the knowledge that he or she acquired to help or guide somebody else to learn a language. This is related to the Zone of Proximal Development proposed by Vygotsky (1978). Learning that was based on the learner's current knowledge was said to be within the learners's Zone of Proximal Development (ZPD) (Vygotsky, 1978) in which the learners constructed knowledge from what they already knew under a teacher's guidance or with the help of their peers - following which the learners were expected to undertake further learning tasks independently.

The role of the teacher, then, was to be a facilitator of learning and to provide learners with opportunities to acquire knowledge and construct meaning through their own activities, and through discussion, reflection and the sharing of their ideas with other learners with minimal corrective intervention.

A respondent commented that
I find it easier to learn English when there is a teacher or an adult who guides me. It is because I can learn something that I don't understand from them until I can do some exercises independently. (Mercurius Interview: NVivo Reference 1)

This statement indicates the role of a teacher as the source of information. The availability of a teacher is more likely to help learners understand what they do not know.

## No-Nativization

The results of the interview indicate that learners of English as a foreign language find it easy to learn the English language where they are not required to be native-like. There has been a long debate whether a learner of the English language has to be like a nativespeaker or not. People who learn English in the setting of learning English as a foreign language find it difficult to be 'native-like'. Unfortunately, not many people realize the difficulties that foreign language learners of English encounter since they think that learning English as a foreign language is the same as learning English as a second language that is learnt since the English language is used in the country in which the learning occurs. There are differences in learning English as a first, a second or as a foreign language. An implication of these differences is the difficulty of learners achieving the standard practices used by native speakers of English.

A respondent reported that

> I find it easier to learn English when there is no demand to be nativelike. It is difficult to be native-like since I started learning English when I was in Junior High School where I have already matured my mother tongue. (Mercurius Interview: NVivo Reference 1)

This statement indicates that it is difficult and not realistic to require a foreign language learner to achieve native-like speech.

## Initiative and Auto-Didactic Learning

The results of the interviews record that a learner finds it easier to learn English when he or she has the initiative to learn English independently of a teacher. Table 9.1A (in the appendices) shows that respondents take some initiative in order to learn and improve their English skills such as: (a) practising listening independently and repeating it many times, (b) borrowing books from a library or friends, (c) copying some pages from a book for studying independently, and (d) checking difficult words in a dictionary. These are all acts of auto-didactic learning.

A respondent reported that
I find it easy to learn English when I initiate to practise listening independently and do some exercises. When I don't understand what the speakers are talking, I repeat it until I understand. (Mercurius Interview: NVivo Reference 1)

Another respondent commented that
I find English easy because I had an initiative to learn English independently. I did not have many English books, but I went to the library to borrow and learn it. I also go to my neighbour to borrow some books and copy some pages for doing some exercises. (Pluto Interview: NVivo Reference 1)

The two interview transcripts indicate that an initiative is likely to be one of the practices that helps learners to learn English more easily. The two interview transcripts indicate that the learners knew what they needed, where their weaknesses and strengths lay and how to tackle their learning problems flexibly.

## Knowledge of Language

Vocabulary and grammar and structure were categorized as knowledge of language Understanding vocabulary is important when learning a new language.

A respondent is reported as saying that she finds it difficult to learn English because she lacks vocabulary, grammar and structure. However, in line with the number of years of exposure to learning vocabulary, grammar and structure, she finds it easy to learn English as is indicated by the interview transcript that follows.

I find it easy to learn English when I have a lot of vocabulary and grammar and structure. I mean that when my vocabularies and grammatical rules increase. (Sun Flower Interview: NVivo Reference 1)

This statement indicates that knowledge of vocabulary, grammar and structure are likely to help learners master the target language.

## Dimension: Perseverance and Motivation

## Question: Why do You Think It is Necessary to Learn English?

Table 9.2A provides information on why respondents think that it is necessary to learn English. (Table 9.2A is presented in the appendices).

There are many reasons why it is necessary to learn English. The results of the interviews from the six respondents mention eight reasons why it is important to learn

English. The reasons are: (a) economic, (b) media, (c) knowledge, (d) technology, (e) education, (f) international communication, (g) travelling, and (h) global language.

## Economic Reasons

Table 9.2A shows that economics is a reason why non-English speakers learn English and the results of the interviews indicate that for economic reasons, it is essential to learn English. Table 9.2A records the reasons why it is necessary to learn English from an economic perspective. The reasons are: (a) the global market, (b) the free market, (c) opportunities to work in a trans-national company, (d) to obtain promotion in a multinational company, (e) a requirement for getting a job in a big national company and a multi-national company, (f) to get promotion to a better position, and (g) to obtain a better job as well as English is the language when looking for a job.

A respondent reported that

> Learning English is necessary to be able to involve in the global market. The ability to use English enables people to have an opportunity to work in trans-national company. Moreover, the ability to use English promotes people to a better position in the workplace. (Jasmine Interview: NVivo Reference 1)

This statement shows that being proficient in English is likely to open up opportunities to participate in a larger society and a person is likely to have a greater chance of success in the workplace.

## The Media

The popularity of English around the world cannot be separated from the role of the media. The results of the interviews summarised in Table 9.3A indicate that it is necessary to learn English because it is the language of the media such as the press, broadcasting and popular music.

A respondent reported that
English is necessary to learn because we can obtain overseas information and news from TV Channel that is reported in English. Moreover, there are some radios broadcasted in English. The availability of foreign radios enables us to gain information from another country. (Mercurius Interview: NVivo Reference 1)

This statement shows that English is the language used to access information from overseas electronic media.

## Knowledge

Table 9.2 A reports the view of the importance of learning English as a language to access knowledge.

One out of six respondents reported that
It is necessary to learn English because knowledge and original resources about science and technology are published in English. Although information is also reported in language other than English, English is a language that dominates the development of science and technology. English is a language of learning new information and developing existing information. (Saturn Interview: NVivo Reference 1)

This statement argues that a large number of international journals are mostly written and published in English. Accessing knowledge from an international journal requires that people are proficient users of English. Moreover, compared to other languages, English is the language that dominates reports on the development of science and technology.

## Technology

The results from the interviews record that learning English is necessary because English is a language used to access technology. There are clear relationships between the use of English and technology. This indicates that people are required to be proficient in English in order that they are able to use the technology. Table 9.2A records the importance of English to access technology.

A respondent reported that
English is necessary to learn because today's generation is electronic generation. They are surrounded by computer and internet which use English as the command language. The menus of the computer and internet are coded in English. (Saturn Interview: NVivo Reference 1)

This statement emphasizes the characteristics of a modern generation that is surrounded by technology.

## Education

The results recorded in Table 9.2A indicate that English has many important roles in the educational setting.

A respondent reported that
English is important to learn because some universities in Indonesia, including my university ITS, are trying to undertake internationalization. (Mercurius Interview: NVivo Reference 1)

This statement shows that English has expanded its status as the language involved in the internationalizing of universities in Asian countries, such as in Indonesia.

## International Communication

The results of the interviews signify that English operates as a truly international language medium. Thus, it also serves as the major language of international communication. English is largely used as the means of communication between nonnative speakers of English in international events both of an academic nature and of business affairs. English is also used as the medium of communication in international conferences and meetings.
One respondent commented that
English is important to learn because if we have a high level of English proficiency, we are able to participate in an international event that uses English as a medium of communication. English is a universal language used in an international event. (Pluto Interview: NVivo Reference 1)

This statement indicates that the advantages gained by proficient English users who participate in an international activity are substantial.

## International Travel

Table 9.2 A records that there are many and a great variety of reasons as to why people travel abroad. They range from studying to working, from business trips to holidays, and for sporting competitions. There are important linguistic consequences for people who are travelling. People who travel visit different countries with different cultures and different languages. They need to communicate with the people they meet in these countries. A national language would need to have been learnt or interpreted, if English cannot be used as the language of communication between people.
One respondent reported that
English is necessary to learn because this provides opportunity to travel around the world. As a result we have an opportunity to make a contact or communicate with foreigner's. (Sun Flower Interview: NVivo Reference 1)

This statement indicates that one of the reasons why it is necessary to learn English is for international travel. Only if people are proficient English users, are they able to undertake international travel effectively.

## Global Language

Table 9.3A records that one reason why English is learnt is because English is becoming the 'global language'. Table 9.3A also records some indicators of English as the 'global language'.

A respondent commented that
It is necessary to learn English because English is a global language. English is taught as a foreign language in high schools in some parts of the world. Moreover, English has an official status as a second language in India and is used as a language of communication in the government and in the education system. (Pluto Interview: NVivo Reference 1)

This statement indicates the awareness of English as the global language and encourages people to learn the language.

## Dimension: Perseverance, Opportunity to Learn and Quality of Instruction

## Question: What is the Relative Importance in your Discipline of being able to Read, Write, Listen and Speak English?

This section reports the results of interviews concerning the relative importance of being able to listen, read, write and speak English from the lecturers' perspectives. Table 9.3A records respondents' views on the importance of being able to read, write, listen and speak English. (Table 9.3A is presented in the Appendices)

## The Importance of being able to Read

Table 9.3A records a range of responses obtained through interviews with lecturers. These responses can be classified into curriculum, fluency and reading rate, knowledge and information as well as pleasure.

## Curriculum

One of a teacher's or lecturer's responsibility is to develop a curriculum, since for a lecturer one of the important aspects of being able to read is the ability to develop an up
to date curriculum. One out of the six respondents reported that reading was important since this helped her design and develop an up to date curriculum.

A respondent stated that
I read a textbook. The relative importance of being able to read is ability to develop up to date curriculum that supports the university's mission and vision. It is important to evaluate the effectiveness of curriculum. Curriculum needs to be developed in line with time demand. (Rose Interview: NVivo Reference 1)

This statement shows that reading is likely to help lecturers develop an up to date curriculum.

## Fluency and Reading Rate

Some of the reading strategies are skimming, scanning, predicting, and identifying main ideas. All six respondents reported that the ability to read helped them read faster.

A respondent reported that
The relevant importance of being able to read is the ability to read fast. I am able to read an article quickly. (Saturn Interview: NVivo Reference 1)

This statement shows the advantages of being able to read fast.

## Knowledge and Information

Information obtained from the interviews records that respondents are able to gain knowledge and ideas from reading. They are able to read an international journal, synthesise new information, and obtain information about the development of science and technology. Moreover, reading can be used to increase a reader's knowledge.

A respondent commented that
I read for obtaining information and increasing my knowledge. I look for information by reading a book. I obtain deep information better from reading than listening. I have more opportunity to read than to listen since there is a written text. (Pluto Interview: NVivo Reference 1)

This statement indicates that reading provides readers with an opportunity to obtain deeper information than listening.

## Pleasure

Information obtained from the interviews records that the respondent likes reading for entertainment.

A respondent said that
I sometimes read in my leisure time for entertainment. I do not read seriously just to achieve a general understanding of a longer text. (Pluto Interview: NVivo Reference 1)

This statement shows that reading can be used for entertainment.

## The Importance of being able to Write

Information obtained from the interviews reveals that the relevance and importance of being able to write provides: (a) the motivation to write an article in an international journal, (b) advances the self-discipline to write an article each semester (six months), (c) ability to encourage the reporting of the results of research in English, (d) facilitates the writing of a project proposal in English, (e) develops the ability to publish a journal article, and (f) ability to publish a book. From the information recorded in Table 9.3A, the relative importance of being able to write can be categorised into two parts, namely, the ability to write and the ability to publish.

A respondent commented that

> The relative importance of being able to write is ability to express written ideas not only in a national journal but also in an international journal. Moreover, the ability to write provides an opportunity to publish a book in English. Since one of academic tasks is researching, there is an opportunity to report the research results in English. (Pluto Interview: NVivo Reference 1)

This statement shows that being proficient in English opens up an opportunity for lecturers to be recognized internationally since they can publish their research results in an international journal. In a university publishing is one of the best ways to disseminate research, to contribute to the field and to extend a professional life.

## The Importance of being able to Listen

The results obtained from the interviews recorded in Table 9.3A show that the relevance and importance of being able to listen is for communication and learning.
For communication, a respondent said that the importance of being able to listen was the ability to communicate with each other, expressing some ideas to the person who was talking to us. It involves sharing information with other people from different countries as well as transferring knowledge to another person or to a wider community, for example at a conference.

For learning, the importance of being able to listen is the capacity to understand the oral feedback, the questions, the comments and the suggestions. It leads to listening: (a) to a presenter in a seminar, (b) to attending a workshop about learning English, (c) to obtaining information from original sources, and (d) to improve vocabulary.

A respondent reported that
The relative importance of being able to listen is for communication with other people. The ability to listen provides the opportunity to respond to what people are talking. We have an opportunity to express ideas and transfer knowledge to a wider community such as in a conference. (Pluto Interview: NVivo Reference 1)

This statement shows that good listeners have more opportunities to communicate their ideas to larger societies.

## The Importance of being able to Speak

Table 9.3A records that the relevance and importance of being able to speak is for communication. The ability to speak provides opportunity: (a) to use English in a variety of ways such as using a classroom as a place for practising English, (b) to use English as a medium of academic instruction in the classroom, (c) to present at a national and an international conference, giving examples in English from other countries, (d) to discuss certain topics in English, (e) to have the opportunity to meet and talk to other people from different cultures and countries, and (f) to share information with people from other countries, gaining information and answers directly from other people, and engaging in two-way communication.

A respondent commented that
The importance of being able to speak in my discipline is the ability to present in an international conference, sharing knowledge with other people from different countries and having opportunity to meet and to talk to other people from different culture and countries. (Jasmine Interview: NVivo Reference 1)

This statement shows that the ability to speak in English enables an English user to participate in an international activity.

## Dimension: Opportunity to Learn, Ability to Understand Instruction and Quality of Instruction

## Question: Describe your Experience in Learning English or What was your Experience in Learning English?

In Indonesia, English is identified as a foreign language. Different people have different experiences in learning English. Table 9.4A provides information about the experiences of the six respondents in learning English as a foreign language that are derived from the interviews. (Table 9.4A is presented in an Appendix).

It can be seen from Table 9.4A that there are many advantages in learning English from a foreign language learners' perspective. The results of the interviews with the six respondents indicate that the respondents learn English from formal learning and nonformal learning as well as autonomy, and working hard to obtain practice. Moreover, the respondents report their experiences in listening, reading, writing and speaking. This section begins with discussing the advantages in learning English formally.

## Formal Learning

Information obtained from the interviews reveals that all six respondents learn English formally starting at the secondary school level and progressing through to the tertiary level.

A respondent reported that
I learn English formally start from secondary level to tertiary level. I have to work hard since I come from a town. There is a lack of facilities to learn English. The learning of English focuses on form. I continue my study to English Department in university. (Mercurius Interview: NVivo Reference 1)

This statement indicates the advantages of how English is learnt formally in a foreign language setting. In this setting, students learn English formally as classroom instruction, and the learning focuses on learning grammar and structure.

## Facilities

The results of the interviews indicate that respondents can learn English with limited facilities both at home and at school.

A respondent reported that
I learned English with very limited facilities. I come from a small town. I had never had an experience for learning English at the Language Laboratory. I learned English at the Language Laboratory when I attended a university in a big city. (Pluto Interview: NVivo Reference 1)

This statement shows that facilities for learning English such as the Language Laboratory are not available in a small town. The use of the Language Laboratory is only experienced when a learner continues his study in a large city.

## Hard Work

Information gained from the interviews reveals that people who learn English as a foreign language find it difficult at the beginning. People have to work hard to learn the English language. They have never used it for daily communication and English is the foreign language to be learnt at school.

A respondent commented that
I worked very hard in learning English since English is not my mother tongue. (Rose Interview: NVivo Reference 1)

This statement indicates that the status of the language influences how a person learns the language.

## Non-formal Learning

For students who learn English as a foreign language, it is not enough to learn English in a formal classroom setting only, and they need to have an opportunity to use it. Particularly, those students who live in a large city have parental support to pay for attendance at an additional English course. Four out of six respondents were able to take a private English course after school hours.

A respondent reported that
I learned English at school as well as at a private English course. I had an opportunity to talk to native-speaker of English at the private English course, not at school. They were missionaries who visited Surabaya for three to four months. The course owner had a good relationship with missionaries who came to Surabaya. The owner provided rooms for them to stay. They also came to my classroom in their free time. I was very happy since I had an opportunity to have a chat with them. I also travelled with them around Surabaya. I accompanied them to go to some interesting places in Surabaya. I had more opportunity to have a light discussion with them. I was a teenager at that time. I felt free to talk and express my ideas. I found a comfortable environment to talk. I was very happy to have an opportunity to talk to native-speaker of English. (Jasmine Interview: Reference 1)

This statement shows that a private English course is another valuable place where a learner can learn English. It is a good place because a learner has the opportunity to interact with native-speakers of English.

## Experience in Learning to Listen to English

Table 9.4A shows that different people have different experiences in learning to listen. The results of the interviews describe in a variety of ways how respondents learn to listen. All six respondents revealed that practising listening involved using audio equipment such as CDs, cassettes, a tape recorder, and a CD player.

A respondent reported that
I learn to listen by listening to CD, cassette using a tape recorder or $C D$ player. (Rose Interview: NVivo Reference 1)

This statement indicates that technology, such as a CD and a CD player can be used as a medium for learning English.

## Experience in Learning to Read English

All lecturers had their own personal experiences in learning to read. Information recorded in Table 9.4A reports how people learn to read. All six respondents learnt to read by reading a textbook. While four out of six respondents also browsed articles on the internet.

A respondent commented that
I learnt to read by reading a textbook in English. (Rose Interview: Nvivo Reference 1)

This statement shows that a textbook in English is a good source book for learning to read in English.

## Experience in Learning to Write in English

It can be seen in Table 9.4A that respondents had different ways and experiences in learning to write. All six respondents reported that they learnt to write by writing a journal article and publishing it, while five out of six respondents learnt to write in English by sending emails in English.

A respondent commented that
I learn to write in English by joining mailing list and involved in a discussion. I also send an email in English to my friends. (Saturn Interview: NVivo Reference 1)

This statement shows that writing in English can be learnt by getting involved in a discussion being on a mailing list, and sending an email in English.

## Experience in Learning to Speak English

Table 9.4A shows a variety in respondents' experiences in learning to speak English. All six respondents reported that they learnt to speak English by using English as a medium of academic instruction in the classroom.

A respondent reported that

> I learn to speak English by using English as a medium of academic instruction in the class, interacting with native-speakers of English available at the university, attending a guest lecture held by the university or a department, and practising speaking English with a foreigner in a tourist destination. (Rose Interview: NVivo Reference 1)

This statement shows that an English class, a guest lecture, and a tourist destination are good places for practising speaking English. This is because a learner of English can practise speaking English with both non-native and native speakers of English at a guest lecture or at a tourist destination.

## Dimension: Opportunity to Learn, Quality of Instruction through Technology

## Question: a) How is Technology Used to Learn English?

Increasingly, there have been a number of EFL teachers who have embraced the use of multi-media technology. Some respondents indicated that many foreign language teachers integrated email-based activities into their curriculum.
Information obtained through the interviews and recorded in Table 9.5A shows that multi-media technology can be used to improve the reading, listening, writing and speaking of the users. Table 9.5A is presented in Appendix 9.5A.
Basically, the information recorded in Table 9.5 A is from the lecturers' perspective about ideas on how technology can be used to learn English, as well as the subject matter of the students' discipline. This is because students are able to download material that relates to their discipline. Students have a greater advantage if they understand English. Unfortunately, opportunities to learn English at the University under survey are limited to only two credit units. These are only a few of the ideas that can be implemented and these ideas are highlighted in Table 9.6A.

A respondent commented that

> Two years ago, I encouraged my students to make web blog and advise students to comment in English to each their friends' blog. Students gave me their blog's address and I had to visit their blogs one by one. First of all, I was very happy because my students competed to create their blog, they made very good blog. They were very creative. They wrote some articles in English in their blog, their friend gave comment about the content of the articles. Although their comments were short, they were able to produce language. I thought that web blog can be used to improve writing. (Jasmine Interview: NVivo Reference 1)

These statements indicate a lecturer's views about the advantages of using technology such as blog for learning English, particularly writing.

## Question: b) Why is Technology Used to Learn English?

Table 9.6A records some reasons for the relationships between English and technology. The reasons are categorised into two themes, (a) media of learning, and (b) language of technology. Table 9.6A is presented in an Appendix.
Table 9.6A records a large number of indicators why English and technology are strongly related to each other. Technology can be used as the medium for teaching and learning English, searching for articles as well as improving writing. Moreover, all six of the respondents reported that the default language of technology is English.
A respondent commented that
One reason for the relationship between English and technology is because the default setting of language of technology is English. (Saturn Interview: NVivo Reference 1)

The statement provides one of the many reasons why English and technology relate to each other.

## Question: c) What are Some of the Obstacles to Using Technology for Learning English?

Although using technology provides many benefits for learning English, there are some obstacles that hinder the use of technology as the medium for learning English. Table 9.7A (that is presented in the Appendices) records some advantages in using technology for learning English that are derived from the interviews. The results are recorded in terms of eight themes, they are: (a) type of technology, (b) class size, (c) cost, (d) access, (e) time, (f) age, (g) ability, and (h) availability. These themes indicate the strong views of the lecturers and are not necessarily those of their students.

Table 9.7 A also provides some information concerning the obstacles to using technology for learning English. In terms of cost, five out of six respondents said that technology is still very expensive and not all people are able to afford it. Moreover, there is limited access provided and it is difficult to access. Because the teaching load is heavy, there is not enough time to use the technology in class. Age also hinders lecturers in using technology in teaching. Three respondents feel too old to learn. Furthermore, not all lecturers are able to operate the new technology. The limited availability of facilities also contributes to the difficulties encountered in using technology as a medium of learning. One of six respondents reported that time and class size are viewed as factors that inhibit opportunities to use technology for teaching and learning English. Although the use of technology is initially promising, the opportunities to learn English that are required with regard to the time provided for learning English is not sufficient.

A respondent reported that
But finally, I felt very tired because I had to visit their blogs and gave feedback. I spent too much time checking my students' blogs. I stopped using blog as a media of learning. I had never used blog anymore as a media of learning English. (Jasmine: NVivo Reference 1)

This statement shows that the type of technology involved, such as blog, inhibits a lecturer in using this technology for learning English. This is because a lecturer has to spend too much time visiting and giving comments on each student's blog. Moreover, the opportunity to use technology becomes less when the teaching load is heavy and the opportunity to learn English provided by the University is very brief. Consequently, lecturers need to be careful in deciding which technology they can use in teaching English.

## Dimension: Ability to Understand Instruction

## Question: How could the English Language be Adapted to Meet Better the Learning Needs of students?

Ability to understand instruction is measured by the ability of the students to comprehend the task. Table 9.8A records the views obtained from the six lecturers of English on the ways in which students are able to understand instruction better. There are five categories derived from the interviews, namely: (a) placement test, (b) ability grouping, (c) curriculum, (d) treatment, and (e) opportunity to learn, that can be used as possible guidelines in order to meet better the learning needs of the students. This
section begins with a discussion of the placement test. Table 9.8 A is presented in the Appendices.

## Placement Test

Information obtained from the interviews shows that according all six respondents, a placement test should be undertaken in order to identify each student's level of English language performance. Moreover, the results of the test should be used to place each student in an appropriate class.
A respondent commented that
Every year the university undertakes an English Pre-test for new students. However, the results of the test have never been used. The test should be designed for a particular purpose, and not just conduct a test without doing a follow up. It is better to use the results of the test to group students based on their ability. So far, the results of the test are only for recognizing students' level of language ability and the results are kept by the University. Lecturers of English have never known the results. (Rose Interview: NVivo Reference 1)

The statement indicates the importance of using the results of the placement test to place students according to their level of ability.

## Ability Grouping

The results of the interviews with lecturers recorded in Table 9.8A also suggested that students need to be grouped according to their ability. Although the terms 'ability' and 'grouping' could be interpreted differently, it can be argued that generally this meant teaching students together who functioned similarly in achievement. This view is based on the assumption that if high achievers and low achievers are mixed, low achievers find it difficult to follow fast-paced lessons. Moreover, students with high levels of English language proficiency give up learning in the English class since the class is too slow and they have to wait while some students understand what they are learning. Furthermore, students learn best when students are divided into homogenous learning groups since they receive an effective instructional program that matches their knowledge and abilities.

One respondent commented that
Students need to be grouped based on their ability. It is better to group students with almost homogenous ability in a class. Sometimes high achievers find the class too slow and they tend to distract other students. However, if the class pace increases, some students find it difficult to follow. Therefore, different curriculum needs to be designed for different classes. (Jasmine Interview: NVivo Reference 1)

This statement shows the necessity and the advantage of grouping students according to their level of ability.

## Curriculum

When ability grouping is employed, it demands different curricula across classes. Information obtained from the interviews reveal that students with low level of ability need to be placed in a class with a specific curriculum designed for them, while students with high levels of ability need their own curriculum.

A respondent reported that
After students are tested, it is better to group them in a class based on their ability and provide them with different curricula. For example, students with a low level of ability have reading as their curriculum. Students with a high level of ability have writing as their curriculum. (Rose Interview: NVivo Reference 1)

This statement endorses the need to provide different curricula according to the level of the students' language ability.

## Treatment

Each student is a different person. This is identified as individual differences. Some students are able to show a high level of performance in English, while other students are not. Students who are identified as having a low level of language ability need particular treatment in order that they are able to achieve the level of English performance required to complete the course with a level of proficiency at the specified and required standard.

A respondent reported that
Since students have different level of English ability, they need to be provided a different treatment. Students who have a low level of English ability need to be given additional English course outside of their English class. Therefore, when they are in a mixed-group class, these students are able to follow the learning process as their friends with high level of English ability. Moreover, students with high level of English ability do not feel too bored. At the same time a lecturer treats the needs of students with a high level of English ability, particularly when they are in Semester 5. They usually compete to look for overseas scholarship to conduct student exchange program. These students need a different treatment as well. (Jasmine Interview: NVivo Reference 1)
This statement indicates that different treatments need to be given to students at different levels of language ability.

## Opportunity to Learn

The results of the interviews indicate that there is a lack of adequate opportunity to learn English at the University under survey. The University only provides two credit units for the English courses during the students' candidature. According to respondents, opportunity to learn has an effect on students' ability in understanding instruction. As a compensation for this, the university needs to provide greater opportunities to learn for students who need more time to learn English until they achieve the university's standard of proficiency.

A respondent commented that

> The University needs to provide more opportunity to learn English for students who haven't achieved the University's goal. These students need more time to learn English. The University should look at the process and not the output only. The University should provide different number of credit units based on students' need. (Saturn Interview: NVivo Reference 1)

The statement indicates the importance of intervention at the University level for students with low level of English language proficiency by providing more opportunities to learn English

## Dimension: Quality of Instruction

## Question: What could You do to Assist Students to Learn English?

There are a number of ways with respect to what lecturers of English can do to assist their students to learn English. Table 9.9A records the results of the interviews with the six lecturers. Respondents assist students by: (a) introducing lecturers' expectations, (b) realizing the importance of English, (c) motivating students to learn English, (d) providing appropriate instruction, (e) undertaking regular assessment, (f) providing consultation time outside the classroom, (g) sharing learning strategies, (h) employing a placement test, (i) offering a variety of teaching methods, (j) providing notes for students, (k) pointing to resources, (l) giving students homework, and (m) reassessing the University through a survey policies and practices. Table 9.10A records the variety of ways that are used by lecturers to assist students to learn English.

## Expectation

Table 9.9A shows that one out of the six respondents reported that she stated her expectations in the first class meeting out of the 16 meetings during a semester course.

She hoped that students would understand that they were expected to succeed in her English class. A lecturer should be able to create interest and encourage students at the first meeting by providing a brief introduction concerning the learning of the English language as well as what students need to do in order for them to succeed in the English course.

A respondent commented that

> It is important for lecturers that they need to have expectations to their students. These expectations need be introduced at the first meeting of the English language class. The first meeting should be interesting. It is important that students are aware that their lecturers have some expectation. Students need to know that they need to do some efforts for their learning success. Therefore, students will be motivated to learn English. Pointing to some resources is not enough, it has to be accompanied by telling explicitly what lecturers expect from them. However, this introduction should be combined by providing comfortable learning environment in order that students feel convenient as well. (Rose Interview: NVivo Reference 1)

This statement indicates the importance of explicit expectations in a comfortable environment from lecturers that are stated at the first meeting of the class. This shows that providing a good class atmosphere for students at the first meeting is necessary in order that students are aware that they are expected to achieve at a satisfactory level of proficiency in the English language.

## The Importance of Learning English

It is undoubtedly true that English plays an important role in some aspects of life. Table 9.9A records that all six respondents commented that: (a) English is a language to access knowledge, information and technologies; (b) English is a language for looking for a job; and (c) English is used as a language in a job interview. Within networks established between foreign and national companies in Asian countries, the language that has the most prestigious position in business affairs is English.
A respondent commented that
Learning English is not only for passing a test. They may be able to pass a test, but it is better to pass a test with a better result, with a good mark. After they graduate, they may need English for doing a job interview. Therefore, it is important to learn English. The English language ability is one of soft skills that help students look for a job. (Rose Interview: NVivo Reference 1)

The statement shows that the importance of learning English is not only for passing a test but also for looking for a job as well as doing a job interview.

## Motivation

The results of the interviews that are recorded in Table 9.9 A provide a number of ways that lecturers can use to motivate their students. A lecturer provides students with: (a) support in learning English such as giving rewards and appreciation; (b) understanding students' motivation in learning English; (c) providing opportunities to present students with interesting topics; (d) providing a good grade; (e) providing a letter of recommendation for students who are applying for studying at an overseas university; (f) providing students with guidance such as helping students to write a scholarship application in English; and (g) providing a role model of successful English language learners by bringing two or more seniors to talk about their experiences at international events

A respondent reported that
One way to motivate students is presenting a model or successful story. A lecturer can offer an interesting method that is able to influence learners' attitude toward English learning. A lecturer can present a role model of successful English learner in the classroom. The role model can be students' seniors and they are asked to tell their experience in a student exchange program, in robotic champion or in another international event. (Saturn Interview: NVivo Reference 1)

The statement shows that presenting a role model of a successful English learner can be used to motivate students to learn English.

## Language of Instruction

Language of instruction is not an issue when a teacher teaches a first language. This becomes important, however, when a teacher is teaching a foreign language and students are being instructed in this target language. Some students understand, while most of them do not. This is particularly the case when a target language is identified as a foreign language in which there is a lack of opportunity to learn the language as well as a lack of opportunity to use the language in practice, and the learners are at the initial level in learning the language

As is recorded in Table 9.9A one respondent reported that
In Indonesia, English is identified as a foreign language. When I am teaching, I use a combination of the Indonesian language and the English language in order that students understand what I am explaining. (Sun Flower Interview: NVivo Reference 1)

This statement shows that the combination of the native language (Bahasa Indonesia) and target language (English) is believed to assist students to understand the concepts that the lecturers are teaching.

## Assessment

There are some reasons why students are not able to perform well on an English test and these result in low English scores. Unfortunately, not many teachers are aware of the factors influencing performance relating to proficiency. Teachers, without doing a formal assessment, merely judge that students have a low or high level of English proficiency, by only relying on the initial scores that the English students obtain and are recorded on file.

One respondent commented that

> Basically students who are admitted to the University are not blank at all. Although there are some students who have low level of English ability, the number of them is very few. So if their English scores are low, it is not because they have low level of English ability. There is something behind the scores. I have to look for information why students get low English scores. I can't just judge them straightaway. They may not prepare well or they may be often absent from the class. (Rose Interview: NVivo Reference 1)

This statement shows the importance of assessment as a process of collecting information to help teachers makes decisions as to what extent the students have reached the learning target. Therefore, it is important for teachers to collect detailed information before judging whether or not students are good at English.

## Consultation

The results of the interviews recorded in Table 9.9A indicate that one out of the six teachers provides consultation time for particular students who need more information and explanation about what the lecturer teaches in the class. Consultation time is conducted outside the classroom activities and is not embedded in the curriculum. It takes place at a lecturer's initiative in order to help his or her students to learn English.

A respondent commented that
I help my students by providing consultation time. If some students don't understand about what I am teaching, I don't mind helping them in free time outside classroom activities. (Pluto Interview: NVivo Reference 2)

The statement indicates that time for teaching English in classroom setting is not enough therefore consultation time outside the classroom needs to be conducted.

## Strategy of Instruction

Information obtained from the interviews shows that lecturers share language learning strategies with their students during a class. They share a variety of strategies that can be used by language learners to cope with the difficulties in learning a foreign language. As recorded in Table 9.9A all six respondents reported that they shared reading strategies, listening strategies and speaking strategies.
A respondent commented that
I share reading strategies with my students such as identifying general information as well as identifying specific information. Moreover, I ask students to identify difficult words in order that they understand what they are reading. (Rose Interview: NVivo Reference 1)

This statement shows that instruction in the form of sharing strategies when teaching reading is a good way to help students learn English more readily.

## Placement Test

The information obtained from the interviews that is recorded in Table 9.9A shows that all six respondents help students learn English by conducting a placement test. The purpose of conducting a placement test is to identify a student's level of language proficiency and to identify students who may be at risk because of their low level of English performance.

One respondent reported that
Placement test is necessary to perform to recognize students' level of English ability. So the English language class is not too heterogenic. Homogenous class is better, while students who are at risk are grouped into their own class and are given their own curriculum. These students are treated in a different class. They may need more opportunity to learn English. (Jasmine Interview: NVivo Reference 1)

The statement shows the necessity to conduct a placement test for students in order that they can learn English well.

## Methods of Teaching

Information obtained from the interviews and recorded in Table 9.9A show that only one out of the six lecturers said that they assisted students learn English by offering interesting methods of teaching and learning.

A respondent reported that
In teaching English as a foreign language, I suggest that we offer an interesting teaching methodology to keep up to date. For example, conducting study
excursion by going to tourist destination. This method enables students to meet foreigners and to talk to them. This gives students opportunity to use the English language. (Pluto Interview: NVivo Reference 3)

The statement indicates that new and interesting methods of teaching and learning are believed to assist students to learn English. These methods provide advantages both for lecturers and students. Lecturers need to keep their methods up to date and students need to have greater opportunities to practise using these methods in order to obtain proficiency in the use of the English language.

## Notes or Handouts

Information obtained from the interviews indicates that only one out of six respondents help the students engage in learning English by providing notes in the form of interactive handouts.

A respondent reported that
I help my students by giving them notes. I give them notes before the lecture and students can add information to complement the notes during the lecture. They can study it at home. (Pluto Interview: NVivo Reference 2)

The statement shows that providing handouts for students is another way a teacher helps his students.

## Pointing to Resources

Information obtained from the interviews also indicates that all six respondents help students learn English by pointing to some ways involving both online and non-online resources. Some respondents even lend students books with some pages to be copied and studied at home.

A respondent commented that
I show students some resources that can be used to enrich their knowledge about what I teach. They can learn it independently at home. I even show them on line resources that can be accessed freely through the internet. If I have a good book, I don't mind that my students borrow it. (Sun Flower Interview: NVivo Reference 1)

This statement shows that pointing to some resources helps students to learn English independently.

## Homework

Table 9.9A records that four out of six respondents report that in order to know how students understand what was taught, they were given homework. From the homework done by students, teachers can learn whether or not students understand the concepts. Homework also serves to help students learn English, in order that students have more opportunities to learn English outside of classroom activities.
A respondent commented that
In order to assist students learn English I give them homework. I ask them to read at home in order that they can improve their vocabularies. I ask them to look for journal article in English and summarize it. I also ask them to watch movie, summarize the plot and retell it in front of class. (Sun Flower Interview: NVivo Reference 1)

This statement indicates that homework is a valuable way to help students improve their English Language Proficiency outside the classroom.

## University Policy

Information obtained from the interviews recorded in Table 9.9A show that all six respondents reported that the University needs to re-assess its policy concerning the English language as a subject of study in the University. There are a number of new university policies that can be used to assist students to learn English. Some suggested policies involve: (a) increasing the number of credit units, (b) considering the learning process and not just the output, (c) using the results of the Placement Test administered to new students, (d) not using the results of the Post-Test as a requirement for graduation, (e) providing access to an academic staff professional development program, (f) providing grants to motivate lecturers to present a journal article written in English at an international conference and (g) increasing the number of credit units awarded on students' level of English proficiency, as well as providing rooms for the teaching of English classes only.
A respondent reported that

> I expect that the University reassess its policies concerning the English language as one of the subject studies learnt by students. The University should increase the number of credit units as a way to improve students' level of English ability. Moreover, more opportunity to learn English should be given to students who are at risk. Additionally, in order to improve our profession, the University should provide access to teacher professional development. For example, the University provides grant for lecturers who are going to present in an international conference. This way will motivate lecturers to write an article
> and publish it in an international journal. It is also important for the University to provide facilities for teaching and learning English. (Saturn Interview: NVivo Reference 1)

This statement indicates the expectations and suggestions of a lecturer for improving the teaching and learning of English at the University.

## Summary

A large number of suggestions and various ideas that are obtained from lecturers of English are recorded in this chapter. Carroll's model of foreign language learning, together with the views, suggestions and various ideas obtained from respondents can be used in a meaningful way to structure and broaden knowledge about the teaching and learning of English in universities, particularly, in Indonesia. They are very important ideas that include speed in language learning (aptitude), the willingness to learn English (perseverance), the amount of time provided for learning English (opportunity to learn), the extent to which students are able to comprehend the task (ability to understand instruction) and how the instructor organizes the learning task as well as the instructor's degree of skill in influencing the effectiveness of presentation (quality of instruction). It is expected from the results of the interviews that there are a large number of views and ideas that can be gained to help Indonesian university students develop their English language proficiency. These ideas and suggestions are able to provide support and information, particularly, for the learning of English as a foreign language (EFL).

However, the ideas and information obtained from the interviews that are discussed in this chapter are incomplete without consideration of information from the students involved. Consequently, the results obtained from the focus group discussion (FGD) with students are reported and discussed in the next chapter. The students' views are necessary to enrich an understanding of the processes of how students learn in the setting of mastering English as a foreign language. The views of both the lecturers and the students can then be employed to increase the students' competence in reading, writing, listening, and speaking the English language through their participation in a specifically designed course that is conducted in an Indonesian University.

## CHAPTER 10 <br> STUDENTS' VIEWS CONCERNING THE LEARNING OF ENGLISH AS A FOREIGN LANGUAGE

## Introduction

This chapter examines the participants' views and perspectives on the learning of English as a foreign language. Data have been obtained by using focus group discussions (FGD) which have been defined as in-depth interactive discussion groups yielding qualitative data (Tull and Hawkins, 1984). Focus group discussions are sometimes referred to as focus group interviews. Similar to the interviews on lecturers' views and perspectives on their experiences in teaching English as a foreign language presented in Chapter 9, Carroll's Model of Foreign Language Learning is used as a guide to obtain students' views on the learning of English as a foreign language.

## Focus Group Discussion Trial

Several trials were first conducted to identify the best number of students for each focus group. Initially, there were seven students involved in a focus group discussion trial. However, after running the trial, it was decided that the focus group discussion was not sufficiently effective with seven participants because seven participants in a discussion group did not yield rich information from all of the participants. Seven participants in a group were too many since not all participants expressed their own ideas because their ideas had been stated by another participant, and the rest of the participants only agreed with what other participants had said. Therefore, after further trials a decision was made that five participants in a group for discussion was the most convenient size in order to obtain rich and varied information on the students' views.

## Procedure for Selecting Cases for Focus Group Discussion

The assistance of the lecturers in English was sought in selecting the participants. The plan employed was to select six students from each of the five faculties, who met several criteria. Three students from each faculty were to be males and the other three were to be females. One male and one female student were to represent each of
the three performance levels in English Language Proficiency of high, medium, and low. For each proficiency level two discussion groups were formed with a mixture of male and female students, and each group contained five students with one student from each faculty with gender and performance level being taken into consideration. This division of participants into group levels was based on the assumption that there might be differences between group levels in the students' experience in the learning of English as a foreign language. Overall six focus group discussions were held and the students were chosen for their ability to express their ideas. However, this study does not consider gender differences in the presentation of the results of the interviews and focus group discussions (FGD) that were held.

In the first step of the selection process more than six students were drawn from each faculty. This was followed up with a large meeting involving all the participants in order to ask for their willingness to give their views and opinions concerning the learning of English. These students were told that in order that the interview and focus group discussions would run well, participants would be provided with a set of questions ahead of the interview. There were more than 30 students who expressed their willingness to participate in the study, and a selection had to be made since only 30 students were to be selected for the study. However, on the days when the focus group discussions were conducted, the total number of participants was reduced to 29 because of the sudden sickness of one student. Moreover, since only those students who had already completed English 1c and English 2c courses and who had not been taught previously by the researcher were selected, so that no conflicts of interests were involved in the discussions.

## Conducting the Focus Group Discussions

There were six groups of students who participated in this study. Each of the groups was required to answer questions that were related to Carroll's model of foreign language learning, and the use of technology in the learning of English as a foreign language. Employing the procedure outlined above, 30 students were selected to participate in this study. Potential participants were contacted individually by telephone to make an appointment in terms of time and place for meeting in a focus group discussion.

The researcher was the moderator of the discussions and guided the discussions by keeping them focused, without becoming actively involved in the discussion and not probing or directing the way the respondents addressed the topic. In addition, the moderator was responsible for explaining the purpose of the sessions, and how the results were to be used. Moreover, the moderator explained that the results would be treated as group data, and no participant would be identified personally except for a quoted statement. Furthermore, the moderator explained that the texts of each discussion were tape-recorded and the tapes were kept in a safe place. Since the moderator was not involved in the discussion, the moderator did neither feed her ideas into the discussion nor change the content or direction of the discussion. Thus, what the participants said was what the participants thought and formed the basis of the report and the discussion that follows in this chapter. Statements made by students are quoted in the text of this chapter and the statements are only identified by a reference number and not by characteristics of the students.

## NVivo and Focus Group Discussion

NVivo is a qualitative data management computer package program that was used to help researchers to examine the results of focus group discussions. For the management of qualitative information, NVivo is a convenient tool to record, manage and store the results of a focus group discussion. NVivo does not analyse qualitative data and information, and it is the researcher's responsibility to analyse the information obtained and to prepare the report. However, NVivo is used to code the information included in the answers to the interview questions. First, Dimensions with respect to Carroll's model which is the framework used in this study were identified. The important information obtained as answers to the interview questions from the focus group discussions was coded into the Dimensions. Then, the information was coded into Categories and matched with the Dimensions. The specific categories were created by choosing an appropriate key word or Theme that is based on information provided by respondents but without changing the initial Dimension. The Dimensions and Categories and Themes were used to guide the preparation of the report of the results of the focus group discussions.

Tables that are presented in Appendix 10 have underlying Themes that are related to the specific focus group Questions that are addressed in the group discussion. The
responses are recorded in summary form according to the discussions and the associated Categories for each Theme and the associated Question in three columns with one column for the Performance Level to which each group belongs. The presentation of the results in this chapter makes systematic references to the material in Table 10.1A in Appendix 10.1A which is given in a separate volume so that the relationships between the text and the Tables can be readily examined. However, only key information is reported in the section that follows, alongside the statements of the students comments recorded in italics.

## Dimension: Aptitude

## Question: How Easy do You Find it to Learn English?

The results of the focus group discussions recorded in Table 10.1A reveal that there are several factors that influence how easy it is for students to learn English. There are three performance group levels, namely high group, medium group and low group, and the students' perspectives and views are recorded in Table 10.1A that are concerned with Aptitude in language learning.

## Opportunity to Use English

It can be seen from Table 10.1A in Categories column that students from the high group and the medium group say that Opportunity to Use English contributes most to speed in language learning. When compared to other categories, as is indicated by the number of participants who give the responses, they mostly indicate that the Opportunity to Use English leads to the successful learning of English.

A respondent commented that
I find it easy to learn English when there is support from environment to use English. So I have an opportunity to speak in English and practise my English. I am happy if there is a friend to talk in English. Moreover, I can practise my English by conducting presentation in English. Opportunity to use English can be carried out by using English as a medium of academic instruction in other subject studies, not only in English classroom. (High Group FDG: Student 4)

The statement shows that a learner considers that it is easier to learn English if there is an opportunity to practise English. Opportunity to Use English is indicated by: (a) availability of an environment that supports the use of English, (b) availability of an opportunity to present in English, (c) opportunity to talk in English, as well as (d) using English as the medium of academic instruction in other subject areas, in addition to the English class.

## Enjoyment

Learners of English in the low group apparently are more concerned with enjoyment and this contributes to the speed in language learning. This is shown by respondents' comments from high and medium groups in contrast with the low group in Table 10.1A.

One respondent commented that
I liked learning English. I found English easier when I enjoyed learning English. (High Group FGD: Student 7)

However, respondents in the low group do not indicate that they enjoyed learning English. This is signified by their responses that they do not like English classes and they readily get confused in English lessons. It may be that because the respondents are confused in English lessons, they do not enjoy them.
One participant commented that
For me, I did not enjoy learning English. English was only a compulsory subject and I had to learn it. I was forced to learn English. I had got confused with English. (Low Group FDG: Student 2)

This statement shows that the respondents' enjoyment in learning English is more likely to influence how readily they are able to understand both grammar and structure in English. They report that they have difficulty in understanding both grammar and structure, and they do not understand tenses and do not remember the patterns of grammar. This suggests that students do not like English because they find English difficult.

## Motivation

Motivation is another factor that leads to the speed in language learning. Students in the high group and some respondents in the medium group are apparently motivated to learn English. Student motivation is indicated by their personal willingness to learn English, as well as the external motivation provided by the student's father or brother. One respondent commented that

If we have motivation to learn English, it is easy to learn it. I find it easy to learn English when I get motivated. (High Group FGD: Student 1)

This statement indicates the role of motivation in learning English.

## Commitment

The results of the Focus Group Discussions indicate that students commit to learning English by demonstrating how serious they take the learning of English and how much time they spend in learning English.
One respondent commented that
I was very serious in learning English. Even I spent extra time to learn English. (Medium Group FGD: Student 2)

This statement indicates that commitment to learning English is considered to be a factor that contributes to speed in language learning.

## How Lecturers Teach Students

The way the lecturers teach their students is another factor that has an effect on the speed in language learning. It is assessed by how effective lecturers deliver a set of instructions in the classroom, and how they organise and prepare materials. One respondent states that the way the lecturers teach their students can influence the speed in language learning.

This respondent reported that
It depends on the lecturers how they teach us. If they teach us properly, organise materials, deliver instructions effectively, I find it easy and quick to learn English. If lecturers do not teach us properly, I do not want to study with them. Finally, I do not like English. (High Group FGD: Student 1)

## Cultural Differences

Moreover, a respondent reported that there are cultural differences in the way people interpret a specific term or proverb in English.

A respondent stated that
There are cultural differences in interpreting meaning in English between Indonesian people and native-speakers of English. For example, English speakers interpret a phrase 'apple of heart' as a boyfriend or a girlfriend, but it is not for Indonesian people. It is only another way how a nativespeaker of English expresses words in English. Indonesian people may interpret it as the heart of apple, but it is not. Indonesian people interpret it word per word because they do not know what apple of heart means. They do not know that 'apple of heart' is a proverb. They have never heard it. They have never learnt it. (High Group FGD: Student 6)

These statements indicate that people who learn English as a foreign language tend to translate word by word that can change the meaning of a phrase or particular words.

It is the way that foreign language learners think. Therefore, cultural differences are believed to contribute to the speed in language learning.

## Technology

Interestingly, students found it easy to learn English when they learnt English through technology.

A respondent stated that

> I read in English while I am playing a game in computer or another electronic device that provide on-line games. Although I do not interact directly with a person who uses English, instructions provided for technology are written in English. (High Group FGD: Student 5)

These statements indicate that each respondent benefits from the opportunity to interact with native-speakers of English through technology. This is because the respondent is learning from authentic materials. These materials are provided in English and are spoken by a native-speaker of English. This view is strengthened by another respondent from the high group who reveals that she finds it easy to learn English when she is able to interact directly with people who use English. Learning is particularly fast when the person is a native-speaker. The respondents find it easy to learn English from a person who speaks the language. This also indicates that learning language through interaction in a social environment is very effective. Moreover, indirect interaction with other people through social networking is believed to contribute to the speed of language learning.

## Dimension: Perseverance and Motivation

## Question: Do You Think It is Necessary to Learn English?

There is no doubt that increasingly English is becoming the most important language in many aspects of daily life. Table 10.2A in Appendix 10.2A records the results of the focus group discussion concerning why it is necessary to learn English. The need to learn English is linked to the ideas of motivation and the necessity to persevere with the learning of English in spite of the difficulties encountered.

## International Language

It is widely recognised by the students that English is one of the major international languages in the world, besides French, Arabic, German, Russian, Spanish and Chinese. A respondent reported that

There are some foreigners in Indonesia. Sometimes Indonesian people work with them and most of them can't speak Indonesian language. If we want to communicate with them, we use English as the means of communication. It is because English is an International language. (High Group: Student 5)

This statement indicates that because of the high position of English as an international language, a large number of people around the world learn the English language.

## Global Language

Increasingly, there is awareness that English is becoming a global language.
A respondent said that
It is necessary to learn English because English is a global language. By having ability to speak English, we are able to communicate with people from different countries and different cultures who work in Indonesia. (High Group FGD: Student 3)

The statement presented above shows that the respondent is explicitly aware that English is becoming a global language. He also realizes that by understanding a global language, he has the opportunity to use English and to interact with foreigners who work in Indonesia.

## Residential Reason

One out of the 29 respondents reported that it is necessary to learn English for residential reasons. A respondent commented that

Some people worked and lived in an English speaking country. I might be like them working and living in a country that uses English. Therefore, it was important to learn English. (Medium Group FGD: Student 12)

The statement shows that many people are aware that currently and increasingly many people from countries in Asia move to English speaking countries to be permanent residents. These people need to work and want to stay in these countries. However, there are some conditions to be fulfilled before applying to become a permanent resident. One of the requirements is having an adequate level of English proficiency. Therefore, when they want to become permanent residents, they have to learn English.

## Access to Technology

The results of Focus Group Discussion indicate that one of the reasons why it is necessary to learn English is because English is a language for accessing technology, especially computer-based technology.

A respondent reported that
English is a language for developing technology, English is mostly used as a language of internet, the manual instruction of digital media is written in English, the default of computer language is written in English and as a result people who understand English are able to operate computer. (High Group FGD: Student 3)

These statements show that there is a strong relationship between English and technology.

## Access to Knowledge

Information obtained from the Focus Group Discussions shows that seven respondents from the high group level, seven respondents from the medium group level, and three respondents from the low group level report that the major sources of science and technology are written in English. Consequently, it is necessary to learn English in order that people are able to access this knowledge.

Seven respondents from the high group report that a large number of international journal articles are written and are published in English. English is the language to obtain information about the development of Science and Technology. Textbooks and reference books are mostly written in English. Moreover, people are able to gain information quickly from a forum that uses English as the means of communication. Furthermore, discussion in an assignment needs to be enriched with information obtained from books that are written in English. Seven respondents from the medium group level provided information that (a) people need to listen to news reported in English, and (b) many websites are written and are promoted in English as well as being read by people around the world.

One respondent reported that

> English and technology relate each other because English is a language of technology. If we only understand Indonesian language, we are not able to operate computer. (High Group FGD: Student 7)

The statement indicates that it is necessary to learn English because English is the language of the computer. The default setting of a computer is generally written in English.

## Access to Economics

Economics is another reason why it is important to learn English. A variety of ideas come from seven respondents in the high group. These respondents find that it is necessary to learn English because some product packages, such as labels, are written in English, and not in the Indonesian language. The composition of a product is generally written in English. Moreover, in the working environment, it is necessary to interact with people who cannot use the Indonesian language and the only common language in many circumstances is to use English.

One respondent commented that

> Some large companies usually have clients from overseas and communication can only be conducted in English. Moreover, some companies in Indonesia are branches of overseas companies. English is frequently used as the only means of communication with these companies. (High Group FGD: Student 5)

This statement indicates that it is necessary to learn English because of the need to use English as the means of communication in the working environment where the clients are not able to speak the Indonesian language.

In addition, eight respondents from a medium group and a low group are more interested in giving an opinion about the importance of learning English as a requirement for looking for a job. Having a certain level of English proficiency helps them to face a job interview.

## Globalization Demand

One out of the 29 respondents reported that it was undoubtedly true that today people lived in a globalized era. In order to be able to live in a globalized era, a global language, namely English, is needed. One respondent commented that

> One of reasons why it is necessary to learn English is because English is becoming a global language. This is because English is used as a means of communication in business and commerce, academic work, and everyday life in a country where there are people from many different countries and different cultures. (High Group FGD: Student 4)

This statement shows that there is a demand for using English as the means of communication in a globalized era.

## Language of Agreement

One out of the 29 respondents commented that it is necessary to learn English because the English language is used as a language of agreement between countries. A respondent commented that

It was important to note that it was necessary to learn English because International agreements between native-speakers of English, between native and non-native speakers of English, and between non-native speakers of English, who did not speak the same language was conducted in English. Subsequently, the agreement was written in English. (High Group FGD: Student 1)

This statement shows that English is used as a language of agreement between nations.

## Passing through Immigration (Customs) Control

Table 10.2A records that two out of the 29 respondents reported that when people are conducting an international journey, they are faced with immigration (customs) control at International airports. They are required to fill in a form and then queue for passing through the control point. One respondent commented that

It frequently happens that the custom officers ask some questions of people who are going to leave the airport or sometimes questions are asked if the officers are suspicious of people. Since the immigration officers use English to interview or question people. This implies that it is useful to learn English. (Low Group FGD: Student 3)

This statement indicates the importance of learning English for passing through the customs control for an international journey at an International airport.

## Academics Reasons

Six out of the 29 respondents commented that it was important to learn English because many university students wanted to continue their study in an English speaking country. One respondent commented that

> I learned English because I wanted to continue my study in an overseas university where the instruction in academic classrooms is conducted in English and assignments are written in English. Presentations are also conducted in English. The reading of textbooks is in English. Consultation with supervisors and topic coordinators is carried out in English. Discussions with administrative staff are also in English. Moreover, academic discussions between International students from different countries are conducted in English. (Medium Group FGD: Student 5)

This statement clearly indicates the importance of learning English for use in academic situations.

## Promoting the Country

A country such as Indonesia is rich with tourist destinations. Large numbers of foreigners from some countries around the world visit Indonesia for holidays each year. Two out of the 29 respondents reported that in order to benefit from tourism, it is important to promote the tourist sites to people from different countries and different cultures.

Promotion can be conducted by making brochures and publishing books about Indonesia. These brochures can be left at some international events such as conferences and exhibitions as well as some international places that are often visited by foreigners such as hotels or restaurants. In order that these brochures can be read by foreigners, it is necessary to print them in an International language, namely English. Consequently, appropriate documents are generally published in English. A respondent reported that

It is necessary to learn English because English is a common language to promote tourism. Indonesia has many tourist destinations, if we are proficient in the use of English, we are able to promote Indonesia to be internationally recognized. (High Group FGD: Student 4)

This statement shows that the ability to use English allows a country to be recognized as a tourist destination, and skill in the use of English is required to gain promotion to a better position in many situations.

## Networking

Two of the 29 respondents argued that the ability to use English enabled people to engage in networking with other people from different countries and different cultures. One respondent commented that

> English was a language for forming network with other people from different countries. Networking could be conducted for example, in economics, business and commerce, education, scientific research, art and cultural exchange. (High Group FGD: Student 9)

This statement indicates an opportunity to form networks with other people from different countries and cultures when they are proficient English users.

## Graduation Requirements

Five of the 29 respondents reported that some big state universities in Indonesia required that students needed to have a certain level of English proficiency before graduating from these universities.

A respondent commented that
I learned English because having English proficiency is necessary for graduating from the University. Students needed to study very hard in order that they were able to obtain a satisfactory level of English proficiency in order to graduate from these universities. (Low Group FGD: Student 6)

This statement indicates that the importance of learning English for a university student as a part of a University graduation requirement.

## Improving Confidence

One of the 29 respondents felt that her confidence improved when she had attained a certain level of English proficiency.

A respondent commented that
I was more confident to apply for a job in a multi-national company when I was a proficient English user. (Medium Group FGD: Student 3)

This statement indicates that the more proficient a student is with English, the more confident she is.

## Participation in a Larger Society

Three of the 29 respondents reported that having a high level of English proficiency enabled them to participate more actively in daily life not only in Indonesia but also in other countries outside Indonesia. One respondent commented that

One of the benefits of learning English is enabling people to live outside of their own country. (Medium Group FGD: Student 5)

This statement emphasizes that people are able to live a richer life in the era of globalization by learning English.

## Entertainment

Two of the 29 respondents reported that it is necessary to learn English for entertainment reasons. This is because learning English enables the learner not only to sing in English but also to listen to opera when the singing is in English.

A respondent stated that
It is necessary to learn English because I am able to sing a song in English and I am able to remember the song. (High Group FGD: Student 5)

The statement indicates that learning the English language is not only important for academic purposes, but it is also necessary for entertainment.

## Dimension: Quality of Instruction

## Question: How can the Lecturer Better Help You Learn English?

Information obtained from Focus Group Discussion recorded in Table 10.3A in Appendix 10.3A shows that lecturers could help students learn English in a variety of ways. The section that follows discusses these different ways one by one.

## Strategy of Instruction

Ten of the 29 respondents reported that lecturers can help them learn English by using a combination of the Indonesian language and English as the medium of academic instruction in the classroom. A respondent commented that

I found it difficult to learn English if my lecturer only spoke in English. It was better to use a combination of language instruction, Bahasa Indonesia and English. (High Group FGD: Student 8)

This statement indicates that the use of language instruction helps students learn English.

## Speaking Ability in English

Table 10.3 A records that ten of the 29 respondents commented that the ability of lecturers to speak English helped students to learn English.

One respondent commented that
It was expected that lecturers of English were able to speak English fluently although they were non-native speakers of English. Students were encouraged to learn English if the lecturers were able to speak English. (High Group FGD: Student 4)

This statement indicates that it is important for lecturers to develop their proficiency in English in order to help their students to learn English.

## Professional Development

Professional development is one way to improve and update a lecturer's knowledge and skills in both teaching and learning. Five of the 29 respondents revealed that teachers and lecturers need to be provided access to learn English through professional development.

One respondent commented that
For example, the university needs to provide a 'Speaking English' course taught by native-speaker of English since it is easier to learn to speak English from a person who uses the target language. Before lecturers encourage their students to speak English, the lecturers need to be able to speak English fluently and accurately. (High Group FGD: Student 10)

This statement indicates the importance of providing access for teacher professional development in the speaking of English.

## Motivational Strategies

Three of the 29 respondents reported that lecturers needed to motivate students to speak English. One respondent commented that

It was necessary for lecturers to motivate to learn English, for example, asking students to read a journal article, asking students to talk in English, and asking students to answer a question in English. (Medium Group FGD: Student 5)

This statement indicates that there are a variety of techniques or strategies that can be used to motivate students to learn English such as: (a) read journals in English, (b) talk in English, and (c) answer questions orally in English.

## Opportunity to Use English (Content-Based Instruction)

Opportunity to use English is one factor that contributes to learning English as a foreign language. The Focus Group Discussions reveal that respondents from all three levels report that they need greater opportunities to use English not only in English classes but also in classes in other subject areas (content-based instruction). There are some experiences in using English such as: (a) to use grammar correctly, (b) submit assignment in English, (c) submit a thesis in English, and (d) present a talk in English, as well as (e) conduct a lecture in English.

One respondent commented that
English can be used as a language of instruction in other subject areas, and not limited to the English classrooms. (High Group FGD: Student 6)

This statement indicates that there is a greater opportunity to use English as a language of instruction to teach subject content. If lecturing is conducted with a combination of using English and the Indonesian language or using English only, in content-based instruction, the English language is used as the medium to convey information and content of interest and relevance to the learner that are associated with the recent developments in the fields of engineering and technology.

## Opportunity to Learn

Another factor that has an influence on English language proficiency is the availability of opportunity to learn English. Opportunity to learn is identified as how much time is spent for learning English. The results of Focus Group Discussion indicate that both respondents from a high group, a medium group and a low group levels reported that the university under survey needed to provide greater opportunities to learn English in the form of increasing the number of credit units for English.
One respondent commented that
Students needed more opportunities to learn English by increasing the number of credit for English although it is not the only way to provide greater opportunity to learn English. (Medium Group FGD: Student 8)

This statement indicates that providing more opportunities to learn English for students is important.

## Providing Handouts

Six of the 29 respondents reported that in order for students to have more opportunities to learn English, hand-outs and modules of other subject areas could be provided in English.

One respondent commented that
A lecturer could help students learn English by providing hand-outs and modules that are written in English. (High Group FGD: Student 2)

This statement indicates that assisting students to learn English can be done by giving more opportunities to use the learning materials that are written in English.

## Media of Learning

One respondent reported that lecturers need to increase the media involved in learning since there are a variety of media that can be used to learn English. It is expected that lecturers need to not only depend on textbooks for teaching English, but also employ information and communication technologies as the sources of new content.

One respondent commented that
Lecturers could help students by improving media of learning English, for example, by using technology. Relying on textbooks only for teaching was out of date. (Low Group FGD: Student 1)

This statement shows that combining media of learning when teaching English is necessary.

## Interactive Learning

One respondent commented that in order to encourage students to participate more actively in class, lecturers can employ a variety of teaching methods. One-way lecturing sometimes makes students get bored easily and hinders interactive communication.

One respondent commented that
Lecturers need to be able to offer more interactive learning in order that students get more involved in the process of learning. (Low Group FGD: Student 4)

Interactive learning provides greater opportunity for students to interact with each other, as well as between lecturers and students through oral and computer based discourse. In this way it is expected that students communicative abilities will improve.

## Rewards

Four respondents reported that lecturers can help students to learn English by giving rewards. Rewards can be given in the form of extra marks, appropriate grades or scores to indicate success.

A respondent commented that
For example, students could get an extra mark if they presented in English. (Low Group FGD: Student 2)

This statement indicates that rewards can be used as the means of motivating students to learn English.

## Role Model

Three of the 29 respondents commented that lecturers can provide a role model for students. It can be done by: (a) placing lecturers themselves as a role model for their students; (b) inviting another lecturer whether or not he or she is an English lecturer; and (c) inviting a lecturer who was an active research worker to talk in English to the class.

One respondent commented that
Lecturer could put himself or somebody else as a role model for students. This lecturer could tell students his or her experience how he or she undertook successful research and developmental work. (High Group FGD: Student 7)

This statement indicates the importance of providing a role model for students to motivate them to learn English.

## Task Familiarity

Ten of the 29 respondents reported that a lecturer can help students learn English by making them more familiar with the learning tasks to be undertaken. For example, in listening comprehension it is difficult for students who are English foreign language learners to understand what native-speakers of English are saying since the speakers talk too fast. Lecturers can help their students by repeating a listening task several times. In this way, students can be expected to become familiar with the task given. A respondent commented that

My lecturer always repeated what speakers were saying more than one time. This helped me to understand what the speakers were saying. I got more familiar with native-speakers of English pronunciation. (Medium Group FGD: Student 3)

This statement shows that the students get more familiar with what native-speakers of English are saying by listening to a task several times.

## Dimension: Ability to Understand Instruction

## Question: In What Ways can Learning be Adapted to Meet Better the Ability Needs of Each Student?

Every individual is different. The differences between individuals have an influence on the ability of individuals to understand instruction. The results of the Focus Group Discussions recorded in Table 10.4A (in Appendix 10.4A) indicate that there are a variety of ways on how learning can be adapted to meet better the ability needs of each student.

## Pretest

Out of the 29 respondents, 11 students reported that they should know their results and their scores on the tests. If they knew their scores for example, and they had low scores, they could take greater efforts to improve their scores.

One respondent commented that
The idea of conducting these tests is good. However, there is no clearly identified purpose for doing the tests. Since students just did the test without knowing the results. Moreover, the results of the testing have never been used. (High Group FGD: Student 1)

This statement indicates that the impact of testing given to students is reduced without telling them the scores that the students obtained.

## Mixed Ability

One way in which learning experiences can be modified to meet better the ability needs of each student is by mixing students with different levels of English proficiency in one class, as opposed to ability grouping. A respondent reported that

Grouping students based on their proficiency is not necessary. There is no discrimination between high achievers and low achievers in the class. Everybody has the same opportunity to learn English. Moreover, if students with different abilities are mixed, students with a high level of English proficiency can share knowledge with students who haven't achieved a satisfactory level of English proficiency. (High Group FGD: Student 8)

These statements indicate that mixing students with different levels of ability gives low achievers opportunities to ask high achievers for help when low achievers find English difficult. However, sharing knowledge between students with low achievement and students with high achievement does not mean that the contributions of lecturers are ignored. Although students can ask lecturers, lecturers are not the only source of information for students. Peer group interaction between students can be very valuable. Sharing knowledge between students can be done in the classroom as well as outside the classroom. Students share information and high achievers can assist low achievers by increasing the efforts that the low achievers make. Consequently, mixed ability grouping is possibly a good solution.

## Speaking Ability

In order that students are able to understand the instruction provided, one respondent reported that lecturers should have greater proficiency in spoken English. Lecturers of English need to be able to talk freely and correctly in English. If lecturers are better able to speak English, this gives the students greater opportunity to use the English language correctly and with fluency. Moreover, in this situation lecturers are the role model for their students to follow.

One respondent commented that
Before lecturers asked students to speak English, lecturers needed to be able to speak English first. (High Group FGD: Student 3)

This statement indicates how students want to see a role model from their own lecturers.

## Using Grammar in a Meaningful Context

One respondent indicated the importance of embedding grammar in a meaningful, communicative context. Learning grammar is important, but this is much more important when there is the opportunity to practise and to use the grammar in reallife communication.

Another respondent commented that
Teaching grammar focus is not relevant anymore. The more important in learning English is using grammar in real life situation. (Medium Group FGD: Student 2)

This statement indicates that there is a demand from students to focus more on use rather than on form.

## Dimension: Opportunity to learn

## Question: How important is it to listen, read, write, and speak English? Is one skill more useful than others?

## The Importance of being Able to Listen, Read, Write, and Speak English

## The Importance of Listening

The results of Focus Group Discussion recorded in Table 10.5A in Appendix 10.5A) describe the importance of being able to listen. Out of the 29 respondents, 15 students reported that the importance of being able to listen was: (a) understanding what people are saying, (b) understanding what they are going to talk about, (c) understanding what they are going to do, (d) understanding what they are thinking about, (e) catching the emotional feeling of the speaker, (f) understanding how people pronounce words correctly, (g) absorbing information fully, (h) avoiding reduction of the information presented, (i) understanding the knowledge provided in the process of learning, ( j ) singing a song, and remembering the words of a song, ( k ) understanding the meaning of a song, (l) enriching vocabulary through the learning of new words and presenting in public, (m) understanding conversation in a film, (n)
communicating meaningfully with another person, (n) interacting with other people, (o) doing a written English dictation test, (p) improving TOEFL score, (q) understanding different variations in the use of the English language that is obtained from listening, (r) responding appropriately to a native-speaker of English, and (t) being familiar with the different accents of English-speaking people from different regions.

A respondent commented that
The importance of being able to listen is ability to absorb information properly. We could understand how much information we could get. (Medium Group FGD: Student 1)

This statement indicates that there is a relationship between the ability to listen effectively and how much information can be understood.

## The Importance of Reading

The results of Focus Group Discussion recorded in Table 10.5A in Appendix 10.5A indicate the importance of being able to read. Out of the 29 respondents, 20 students reported that the importance of being able to read was (a) comprehending a handbook or textbook written in English, (b) understanding the content of literature, (c) understanding what people write, (d) comprehending what is being read without translating it into the Indonesian language, (e) learning to operate a computer, (f) understanding research results, (g) having the opportunity to use a dictionary, (h) having the opportunity to review what has been read, (i) summarising what has been read, ( j ) discussing the content of a textbook with friends, (k) having the opportunity to study overseas, (l) writing a proposal in English, (m) obtaining information, and (n) understanding a specific topic, for example know how civilization develops and becomes modern through the advancement of technology.

One respondent commented that

> If I were able to read English, I would find it easily to comprehend what I read without having to translate it in Indonesian language. (Medium Group FGD: Student 9 )

This statement indicates that the ability to read in English helps the learner of a foreign language to understand the content easily.

## The Importance of Writing

Information obtained from Focus Group Discussion in Table 10.5A in Appendix 10.5A shows that 19 out of the 29 respondents reported that the ability to write in English enables them (a) to be able to write an application letter, (b) to improve their vocabulary, (c) to have the opportunity to study overseas, (d) to write a proposal in English, (e) to write an article in English, (f) to have the opportunity to publish an article in an international journal, (g) to disseminate knowledge, (h) to be able to express ideas in writing English, (i) to interact with people through writing, (j) to send an email for establishing a social network, ( k ) to make a friend, (l) to practise grammar and sentence structure, (m) to help a respondent make a job report, and (o) to send an email in English.

A respondent commented that
The importance of being able to write in English was that we had greater opportunities to publish an international journal article. (High Group FGD: Student 1)

This statement indicates that ability to write in English provides an opportunity for people to be recognized internationally.

## The Importance of Speaking

Table 10.5A in Appendix 10.5A records that all 29 respondents were involved in reporting the importance of being able to speak English is (a) to express ideas, (b) to make friends, (c) to express emotional feelings, (d) to participate more actively in the global world, (e) to interact with people from different countries and cultures, (f) to network with both Indonesian and other people around the world, (g) perform better in class, (h) to feel more confident, (i) to promote ideas to someone else, (j) to receive feedback from someone else and to obtain a solution through the feedback, (k) to conduct a joint project with foreigners, (l) to be involved actively in an international event, (m) to pass on information to people from different countries, (n) to conduct a job interview, (o) to obtain a good position in a job, (p) to be promoted to a better position, (q) to be trusted by a boss, (r) to communicate with people from other countries, (s) to participate in an English debating competition, (t) to study overseas and work overseas, and (u) to have the opportunity to talk to and discuss with an expert from overseas.

One respondent commented that

> Ability to speak in English is important because this provided us more opportunities to participate in international events such as conferences and Olympiads. (High Group FGD: Student 7)

This statement indicates a positive benefit of being able to speak English.

## Talking or Writing to Native Speakers of English

Question: What Opportunities or Experience as well as Advantages do You Have to Talk or Write to People who are Native Speakers of English?

Table 10.6A in Appendix 10.6A records the opportunities and experiences that students have to talk or write to people who are native-speakers of English. Ten respondents from high group level and five respondents from a medium group reported that they felt useful ${ }^{9}$, one respondent from a high and medium groups commented that they were more confident, and a high group respondent indicated feeling valuable when they were talking to a native-speaker of English. Two medium group respondents also felt that although they did not speak fluently or their grammar was not good, native-speakers of English were able to understand them. However, one respondent from a high group reported that native-speakers of English sometimes spoke with a mumble that was difficult to understand.

There are a variety of alternatives on how non-native speakers of English have the opportunity and experience to talk or to write to people who are native-speakers of English. Private English courses run by native-speakers of English provide the opportunity to talk to people who are native-speakers of English.

Talking to native speakers of English is also a good way to practise learning the skill of listening to English. This is because a learner has to listen carefully in order to understand what the native-speakers of English say. Dialogue occurs when people understand what they are talking about. Listening in class is one way to develop the skill of listening. A language laboratory is another place to learn how a nativespeaker of English talks. A respondent from a medium group level reported that he had a valuable experience of talking to a native-speaker of English at the University under survey because there was an expert who worked at the electronic laboratory. Because the expert could not speak the Indonesian language, the respondent was

[^6]forced to speak English and this was valuable experience in talking to a person who was a native-speaker of English.

One respondent from a high group level reported that she had the opportunity to ask for clarification of some difficult words and new words that she did not understand when she had an opportunity to talk to native-speakers of English. When a nativespeaker of English is an academic, she or he tended to use academic English when she or he talked in English. The use of academic English might also be influenced by the situation in which they were talking. If they were talking in front of students or academic staff in a university or at a professional conference, this dictated that academic English should be used. Moreover, respondents in this study were university students who might have the opportunity to talk in English to a nativespeaker of English at an academic event.

A respondent also reported that when he was talking to native-speakers of English there were dialect differences between Indonesian people and native-speakers of English when they were talking in English. However, this is not surprising since Indonesian people are non-native-speakers of English, and English is identified as a foreign language in Indonesia.

Respondents from a high and a medium group levels reported that it was very useful to talk to people who were native-speakers of English. This was because they found it easier to learn a language from people who spoke the language. One way to have an opportunity to talk to native-speakers of English was by attending an international event such as an education exhibition, robotic exhibition and technology exhibition. Moreover, some respondents from three group levels, high, medium and low, reported that in order to have an opportunity and experience to talk to native speakers of English, they went to interesting places or tourist destinations that were frequently visited by foreigners such as Bali and Yogyakarta. In these places, respondents had the opportunity to talk to the tourist to, for example, by asking them to take a photo together.

Some respondents reported that they had an opportunity to write in English by chatting with their pen pals through the internet. They had to chat in English. An online game is also another medium that could be used to have a chat with a friend. Since the user could have a so-called 'chat' by writing in English. Furthermore, some respondents had the opportunity to write in English by joining a community or
mailing list. They had the opportunity to discuss ideas in English by writing. Some of the respondents had an opportunity to write in English by visiting certain web sites. They wrote some comments in English.

Talking to native-speakers of English motivated non-native speakers of English to speak in English. A respondent reported that he felt motivated to speak English when he was talking to a native-speaker of English. Moreover, for some respondents talking to a native-speaker of English was a kind of new experience that has never been used before. This was particularly so when the opportunity to talk to nativespeakers of English was limited and had previously only happened several times. However, it is the view of some Indonesian people who say that people who are able to speak English and who practise it in their home environment are arrogant. Therefore, one respondent reported that he felt scared of talking in English because someone else would form the opinion that he was arrogant.

## Technology

## Question: What Experiences and Advantages do You Have (if any) in Learning English through Technology? (such as Computer, Email, Internet, Skype)

The results of the Focus Group Discussions recorded in Table 10.7A in Appendix 10.7A provide information on the respondents' experience and thoughts on using technology to learn English. Respondents from different group levels reported a variety of possible ways that technology could be used in a language classroom.

## The Use of E-mail

Three respondents reported that submitting an assignment by e-mail to a lecturer was the most obvious form of using e-mail for English teaching. E-mail offered students an opportunity to have dialogue with their lecturers.

One respondent commented that
I learned English through technology by using e-mail. I sent my assignment through e-mail. I had an opportunity to use English by writing an e-mail to my lecturer. (High Group FGD: Student 3)

This statement indicates a learner of English has an opportunity to use English by writing e-mail in English.

## Uploading Material

One respondent reported that technology, such as 'facebook' could be used to upload teaching materials. According to a respondent facebook could also be used as a medium for learning English.

A respondent commented that
Lecturers and their students could make a facebook group for each class. The face bookgroup could be designed for academic discussion between the students in a class group and between lecturers and their students. Therefore, classroom materials could be uploaded through facebook so that everybody could download and read the material before the next lesson. (High Group FGD: Student 1)

This statement indicates the function and use of facebook for academics purposes.

## Watching Movies

Two respondents indicated that Western movies were one of the media that could be used to learn English. Students could watch the movies together in the class. One respondent commented that

Some movies or DVDs provided sub-titles that students could use to learn the written-language input as well as oral language at the same time. Students could read the sub-titles provided. At the same time students could practise their listening skills. Sometimes, students were unaware of opportunities to rehearse or practice their skills or speeches to improve both their listening and speaking skills. (High Group FGD: Student 7)

This statement indicates that the function of watching Western movies or DVDs is not only for entertainment but also for learning English.

## Opportunity to Write in English

Five respondents from a high group reported that technology such as TV, DVDs, email, face book offered students greater opportunities to practise writing in English.

A respondent commented that
For example, watching a movie provided students with the opportunity to summarize what they had watched by writing it in English. Moreover, the emergence of the internet in the form of e-mail provided students with more opportunities to write in English for communicating with people from different countries and different cultures. The popularity of facebook offered people the opportunity to make pen pals with people around the world. This encouraged them to write their thoughts in English in order that their ideas could be commented on by somebody else in English. (High Group FGD: Student 9)

This statement shows that a variety of technologies provide learners of English opportunities to write in English.

## Practising Speaking in English

One respondent from a high group reported that students could discuss what they had watched with their friends in English in the form of a small group discussion. Three respondents from the low groups commented that they chatted on the internet in English. One respondent commented that

Movies that we watched in a class provided us opportunity to speak in English. My lecturer usually asked students to discuss what movies were about. (High Group FGD: Student 10)

This statement indicates that technology provides students with opportunities to listen and write as well as to speak in English.

## Multi-Media Presentation

One respondent from a high group level indicated that computer technology provided students and lecturers with opportunities to use PowerPoint and other media presentation software. The availability of PowerPoint presentation software also provided the opportunity for the users to talk in English when presenting a topic. One respondent commented that

> Student, individually or in a group, could present the results of the discussion of a specific topic. Lecturers could also use PowerPoint presentation slides for delivering their lesson in English. In this way, a lecture could be designed interactively by using technology as the medium for teaching and learning. (High Group FGD: Student 3)

This statement indicates the use of technology for knowledge transmission and as a multi-media presentation for learning.

## Practising Listening

One respondent from a high group level reported that technologies helped the learners of English to practise their listening. By listening to news or concert, the learners of English were expected to become very familiar to what native-speakers of English said.
One respondent commented that
Technologies such as CDs, DVDs, radios, tape recorders, televisions, computers and mobile phones provided the opportunity to listen to the music, conversation and news in English. (High Group FGD: Student 9)

This statement clearly indicates the benefit of learning English for helping students to practise listening.

## Practising Reading

One respondent from a low group level reported that internet such as 'yahoo messaging website' provided news in English. This website was frequently updated with the latest news. This provided people with the opportunity to read the news in English as well as to update the latest news in English.

One respondent commented that
I read news in English through 'yahoo messaging web site'. (Low Group FGD: Student 1)

This statement indicates that technology such as the internet provides an opportunity to practise reading in English.

## Obtaining Information

One respondent from a high group level reported that people found it easy to obtain information because of the advancement of computer technology such as the internet. One respondent from a medium group commented that through using the internet people could obtain information quickly and share information with other people.

A respondent from a low group level added that
I got the latest information and news by listening to a TV Channel. (Low Group FGD: Student 2)

This statement indicates the importance of technology to obtain the latest information.

## Computer Application

One respondent from a high group level reported that the learners of English could learn English through some computer applications since the instructions available for the computer application were written in English. Automatically, the users learn to English through the computer applications. One respondent from a medium group level added that

Computer applications such as AutoCAD were used by students from the Department of Product Design. AutoCAD used English as the programming language. The users of AutoCAD automatically learnt English. (Medium Group FGD: Student 1)

This statement indicates that students learn English through using software.

## Translation

Respondents from each of the three group levels, namely high, medium and low, reported that they used technology for translation. A respondent commented that

Because English was not my first or second language, I used technology to help me translate difficult words in an article from the Indonesian language to English. (Low Group FGD: Student 5)

This statement indicates the use of technology in translating from one language to another language.

## Coding

A respondent from a high group level indicated that the users of technology, in particular Information Technology (IT) experts, could make a program by coding.
One respondent commented that
Since the programming language was written in English, the IT experts had to have a certain level of English Language Proficiency in order that they were able to make a program. This was because the code for making a program was written in English. Moreover, they had to be able to read a code written in English. (High Group FGD: Student 7)

This statement indicates the close relationship between technology and opportunity to learn English.

## Learning Another Language

A respondent reported that the advent of computer technology and its application provided greater opportunities to learn not only the English language but also other foreign languages such as Japanese, Spanish, and Arabic, French as well as German. One respondent commented that

Although the manual instruction of software was mostly written in English, there were some other languages provided in the instruction manual such as French, German and the Arabic language. This provided people with the opportunity to learn another language. (Medium Group FGD: Student 3)

This statement indicates an opportunity to learn other languages through technology.

## Demonstrating New Method of Teaching

The results of Focus Group Discussion indicated that computer technology could be used to demonstrate new teaching methods. The integration and use of technology in language teaching could be accepted as a new method for language teaching.
A respondent reported that
The computer provided lecturers with the opportunities to use its facilities for demonstrating new teaching methods. (High Group FGD: Student 1)

This statement indicates the use of technology for developing new teaching methods.

## Efficiency

The results of Focus Group Discussion indicated that e-learning was a time efficient and effective way of learning English. E-learning enabled students to learn without having to meet lecturers in the classroom. One respondent commented that

For some people, e-learning was much more efficient in terms of time.
Lecturers were able to upload materials without having to come to the class. Students were given access to materials that can be downloaded quickly; therefore, they were able to learn independently. (Low Group FGD: Student 1)

This statement indicates that under certain conditions technology is an efficient tool for learning.

## Become a Member of a Community or Forum

Four respondents from a high group level and one respondent from a low group level reported that the availability of the internet enabled students to join some communities or forums such as a Computer Forum or a Community of Learning. One respondent commented that

I had an opportunity to interact with other people around the world when I joined Computer Forum. Automatically, I had to write in English in order that I could involve in the forum. (Low Group FGD: Student 2)

This statement indicates that technology provides students with an opportunity to interact with people around the world by joining a forum. People can interact 'virtually' with other people from different countries and different cultures.

## Improving Vocabulary

Technology could be used to enrich the students' vocabularies. One respondent from a medium group level and two respondents from a low group level reported that they used online dictionaries for looking for the meaning of difficult words in English. The learners of English tried to improve their vocabularies by searching for new words through the internet. Moreover, browsing some articles through the internet provided learners with the opportunity to use new words and to enlarge their vocabularies.

A respondent commented that
I used online dictionary to look for a difficult word. (Low Group FGD: Student 1)

This statement indicates the use of technology as an online dictionary.

## Default Setting

A respondent reported that in order to learn English through technology such as face book, he set the default of facebook language in English. Therefore, the instructions were written in English. It was a way of learning English in the context of a foreign language. One respondent commented that

In order that I could learn English, I set the default setting of facebook in English (Low Group FGD: Student 3)

This statement indicates an opportunity to learn English through technology since the default setting of technology is in English.

## Playing Online Game

A respondent reported that he learned English by playing online games.
One respondent commented that
Since this was an online game, sometimes the character in a game talked to the user game. Consequently, the user had to reply orally in English. At the same time, the user practised speaking, using tenses and appropriate verbs, with questioning, as well as listening. (Low Group FGD: Student 1)

This statement indicates the positive side of playing online games.

## Summary

There is a large amount of interesting information obtained from the results of the focus group discussions concerning the learning of English in the context of a foreign language that is different from the learning of English as a second language in English speaking countries.

Carroll's Model of Foreign Language Learning is able to provide useful information concerning students' views about the learning of English as a foreign language. The level and speed of language learning (Aptitude) is not only influenced by students' linguistics competence, but aptitude is also influenced by factors other than the students' knowledge of language. A discussion on aptitude is given on page 114.

The reasons why it is necessary to learn English (Perseverance and Motivation) do not only relate to the respondents' personal needs, but more importantly the reasons for learning English can be related to a nation's needs in order that the nation's people are able to participate more actively both nationally and internationally.

Quality of Instruction can be given by providing a variety of strategies and activities that are able to help students to learn English more readily. Quality of instruction does not only help teachers to improve their teaching and learning of English, but this also helps students to learn English more easily. Activities can be given both in the classroom and outside of the classroom.

Ability to Understand Instruction does not only involve the teacher's ability, but this also involves the student's ability and the institutional context. Consideration of the institutional context is important because this relates to the policies and practices, as well as the interactions between students.

Opportunity to Learn English can be obtained through opportunities to listen, read, write and speak in English, opportunities to talk to native speakers of English, and learning English through technology. The results of the Focus Group Discussions indicate that technology provides a variety of ways that can be used by learners of English to improve their proficiency in English.

There is also important information from the Focus Group Discussions concerning how the courses (English 1c and English 2c) are structured. These results are reported and discussed in the chapter that follows together with the ideas presented in Chapter 9 that are obtained from the interviews with the teachers.

## CHAPTER 11 HOW THE ENGLISH COURSE IS STRUCTURED

## Introduction

This chapter follows from the two earlier chapters that are concerned with the results of both interviews and focus group discussions. In line with the specific aims of the study, this chapter investigates the research question 'How is the English Course Structured at the University under survey?' stated in Chapter 6 that strongly relates to the research question about the growth and change of learning over time. This is a highly relevant chapter because it provides additional information to help explain the results of the quantitative analyses that are discussed in Chapters 12, 13, 14, and 15.

Before reporting the results of the interviews and focus group discussions, it is important to provide a brief overview about the nature of the English course at the University. The English course is identified as a compulsory subject in the university program. This is because English is a part of the national curriculum. The University provides major courses in Science, Technology and Engineering studies, but not a major course in learning a foreign language. Since the University has these specific disciplines, and does not have a Department of English, only English for Specific Purposes (ESP) is taught in the University. English for Specific Purposes (ESP) has two strands with different goals and acronyms, namely, English for Academic Purposes (EAP) and English for Occupational Purposes (EOP). This study is concerned with English for Academic Purposes (EAP) and it is necessary to explain the setting in which English for Academic Purposes (EAP) is taught.

## Four Different Settings of English for Academic Purposes (EAP)

English for Academic Purposes (EAP) involves the English needed in educational settings, such as at a university, college, school or similar institution where students are taught in a formal and academic way. However, it is worth noting that EAP is generally taught in one of four different settings.

The first general setting is where English is taught to non-native-speakers of English, in particular, International students are studying at universities in English speaking countries such as in Australia, New Zealand, the United Kingdom and the United States as well as Canada where everything around them operates in English. The students are taught courses related to study skills and practices such as referencing, building argument, academic writing, seminar skills, presentation skills, note-taking, listening to lectures, writing a scientific report, and reading, and writing an abstract or conclusion. Non-native speakers of English who are studying at overseas universities in English speaking countries usually attend EAP courses that prepare and help them to adjust to academic environment that uses English as a medium of classroom instruction and for learning specific subject matter. All the general literature and textbooks are written in English.

Secondly, English for Academic Purposes is taught in countries, such as Zimbabwe, Nigeria, India, and Singapore where English is used as the second language. In these situations English is used as a medium of academic instruction in an educational system. However, people in these countries mostly use their first language (L1) as the means of communication in everyday life.

The third setting is where English is taught in non-English speaking countries, such as the Middle East, Lebanon, and Malaysia, where English is used as a medium of academic instruction for some particular subjects. For example, Mathematics and Science are taught using English, but other subjects are taught using the national language.

The fourth setting is where English is taught in non-English speaking countries such as in Latin America, South East Asia including Thailand, and Indonesia where English is taught using the national language. In line with the advancement of Information and Communication Technologies (ICT), English is also taught using a combination of the national language and the English language. However, other subjects in addition to English are taught using the national language, and English is one of the subjects to be learnt.

This current study is conducted within the fourth setting where English is included on the timetable and the medium of instruction involves a combination of English and the national language (Bahasa Indonesian). This is because English in this
setting is identified as a foreign language and generally people do not speak English in Indonesia.

## Types of English for Academic Purposes

English for Academic Purposes (EAP) commonly involves two different teaching approaches. They are: (a) English for General Academic Purposes (EGAP) that is designed for the pre-study group, or groups containing a variety of students from different disciplines; and (b) English for Specific Academic Purposes (ESAP) that is designed for students from a similar disciplinary group. It is generally easy, but is sometimes confusing, to distinguish between the terms EGAP and ESAP by profession, such as English for Engineering, English for Agriculture and English for Medical Practice. The last two terms, namely EGAP and ESAP, are employed with respect to English for Specific Academic Purposes. For example, English for Engineers is provided for students of Engineering, where a common discipline is involved, and where content knowledge is taught using English as the medium of academic instruction. The classes can also be designed to help students to meet the specific needs of Engineers such as writing a report in English. Since ESAP is designed for teaching students who are studying the same discipline, the material taught involves common subject matter and classroom instruction that is conducted in English. This approach is also referred to as 'content-based' instruction (CBI).

This chapter considers the results of the interviews with the six lecturers and focus group discussions (FGD) with 29 students concerning the structure of the English course at the University.

The main research question in this chapter is "How is the English language course structured at the University?" In order to examine how the course is structured at the University under survey, there are three further interview questions advanced:
(1) What type of English is taught at the University?
(2) What do the lecturers of English teach to their students?
(3) How are the skills of English taught and tested?

Since there are two English courses, namely English 1c and English 2c, provided by the University, the discussion in this chapter only involves these two English courses.

## The Results of the Interviews and the Focus Group Discussions (FGD)

Table 11.1A , Table 11.2A, and Table 11.3A in Appendix 11.1A record the results of interviews with the lecturers who taught English 1c and English 2c and the focus group discussion (FGD) among students who enrolled in English 1 and English 2. Moreover, the word 'frequency' for values that are recorded in columns five and seven of Table 11.1 A , Table 11.2A, and Table 11.3A refer to the total numbers of respondents across all groups be they high, medium or low who answered according to a particular category.

## Question: What Type of English is Taught at the University?

Generally, Table 11.1A in Appendix 11.1A records that all six lecturers of English reported that there were two kinds of English courses identified as English 1c and English 2c provided by the University. Detailed information obtained from the interviews with the six lecturers and the focus group discussions with the students is presented in the section that follows.

## English 1c Course

Table 11.1A records that for English 1c, the six lecturers reported that the lecturers taught English for General Academic Purposes, namely General English for Science and Technology.

One of the six respondents commented that
The University where I work majors in Science and Technology, and does not have the Department of English. Students learned a strand of English for Specific Purposes, namely English for General Academic Purposes because the class was not homogenous. The class contained students who came from different departments. This circumstance impacted on what sort of English was taught at the University. Students were taught General English for Science and Technology. (Rose)

Similarly, 23 out of 29 students reported that they learned English for Specific Purposes (ESP).

One of these 23 students reported that
My lecturer told students that she was not going to teach students general English, but she was going to teach English for Specific Purposes (ESP), particularly, General English for Science and Technology. (Students 8)

The two statements show the nature of the type of English taught at the University. The characteristic of the University that provides majors in Science and Technology
has an influence on the type of English taught at the University. This also indicates that there is a relationship between the nature of the University and the nature of a course offered.

Moreover, the two statements show that English 1c focuses on EAP (English for Academic Purposes), and not General English or English for Occupational Purposes (EOP) such as Business English. Because the University under survey provides major courses in Science, Technology and Engineering, the type of EAP taught is General English for Science and Technology, and not Specific English for Science and Technology. This is because there are a variety of students from different departments in one class. Moreover, it is identified as General English for Science and Technology because the learning of English focuses on language and not on the content knowledge of the subject matter such as English for Chemistry, English for Physics, English for Mathematics, English for Mechanical Engineering, English for Electrical Engineering or English for Environmental Engineering. It is also because the English course focuses on teaching the skills of English, and not teaching the subject matters knowledge using English. The English course is focused on teaching language, and does not focus on the teaching of a specific discipline. Thus, it can be inferred that the teaching and learning of English is conducted within the context in which English is not the mother tongue.

## English 2c Course

Table 11.1A records that all six of the lecturers reported that the focus of English 2c was doing TOEFL-like exercises. The six respondents reported that the purpose of English 2c was preparing students for taking the English Foreign Language Proficiency Test.

One of six respondents commented that
English 2 focuses on doing and practising TOEFL-like exercises (Jasmine).

This statement indicates that the nature of the English 2c course involved preparing students for sitting a test. This is strengthened by the information that 29 out of the 29 students reported that students learned from TOEFL-like materials.

## Question: What do the Lecturers of English Teach to their Students?

This section reports the results of the individual interviews and Focus Group Discussions (FGD) concerned with what the lecturers of English teach their students in the classroom.

## English 1c Course

The results of the individual interviews with the six lecturers of English 1 recorded in Table 11.2A in Appendix 11.2A indicate that lecturers taught a variety of skills of English, namely listening, reading, writing and speaking, and knowledge of the language, namely grammar, structure and vocabulary. Information obtained from the interviews and recorded in Table 11.2A shows that all six lecturers teach some skills of English such as reading, listening, speaking, writing, grammar and structure, and vocabulary.

One respondent reported that
I taught students reading, listening, speaking, writing, grammar and structure, and vocabulary. (Pluto)

This statement indicates that the lecturers teach a variety of the skills of English usage, knowledge of the language in terms of grammatical knowledge, as well as lexical knowledge (vocabulary).

However, the learning of English 1c does not focus on just one particular skill involving the English language as is revealed by all six of the six lecturers. The students have the opportunity to read scientific articles about the development of Science and Technology, to listen in the Language Laboratory, to present to the class in English, as well as to learn grammar, structure and vocabulary.
One of six lecturers commented that
English 1 did not focus on one skill of English. Students had an opportunity to read about the improvement of Science and Technology in general, to practise listening comprehension at the Language Laboratory, to present in English and to learn grammar and structure and vocabulary. (Rose)

This statement indicates that the lecturer taught integrated materials, namely the skill of listening, and the knowledge of language, namely grammar and vocabulary as well as presentation, in addition to reading comprehension. This indicates that the learning of English 1 did not emphasize one particular skill of the English language.

Additionally, the materials given were about English for Academic Purposes in general, and not English for Specific Academic Purposes (ESAP).
Similarly, 29 out of the 29 students commented that they had an opportunity to learn an integrated skill of English that involved learning the various specific skills of English.
A student reported that
My lecturer taught me reading comprehension, listening comprehension, presentation skills, grammar and structure, and vocabularies. Listening comprehension, in particular, was conducted at the Language Laboratory. (Student 2)

These statements indicate that the learning of English 1c does not emphasize only one skill in the English language, but students have the opportunity to learn the skills of English such as reading, listening, and the knowledge of language, namely grammar and structure and vocabulary.

Reading requires a written text. The text consists of words, phrases and sentences that lead students to learn grammar and structure as well as vocabulary. This also implies that lecturers teach grammar and structure and vocabulary through reading. This is because lecturers have to explain the forms of sentences in order to help students to comprehend the passage given. The lecturers explain and discuss the forms of sentences that are found in the passage. Therefore, English lecturers teach their students listening, reading, speaking in terms of presentation skills, as well as grammar, structure, and vocabulary in writing.

It is also emphasized by all six lecturers that although students have the opportunity to read and to learn about the development of Science and Technology, the materials presented are more about reading to learn of the advancement of Science and Technology in general, and not about the students' specific discipline.
One out of six lecturers commented that
The aim of the learning of English, in particular English 1, was teaching students' language, and not teaching students' content knowledge using English. I did not teach students' subject matter using English, but I taught language. Therefore, students read a variety of themes about the development of Science and Technology in general, and not to read their textbook in English. (Jasmine)

This statement shows that the learning of English is not about teaching students' content knowledge or subject matter using English as a medium of instruction, but students are given material, for example, in reading comprehension, and students
read to learn about the advancement of science and technology in various fields and from case studies. The themes differ because there is a heterogeneous group of students in each class. Therefore, the learning of English is really learning language, and not the learning of subject matter using English.

## English 2c Course

The results obtained from the interviews indicate that all six lecturers involved teaching students listening, reading, structure and written expression, and vocabulary.
One out of the six respondents stated that
Since English 2 focuses on preparing students for sitting an English foreign language proficiency test, I taught them listening, reading, structure and written expression, and vocabulary. These materials were tested in a test. (Saturn)

This statement confirms that the focus of teaching English 2c involves preparing students for a test as is indicated by the material taught and the material tested.

English 2c has a different content and purpose from English 1c. The purpose of English 2c is the preparation of students for sitting an English Foreign Language Proficiency Test (ELPT). Students are given TOEFL-like materials.This is because the form of the English Foreign Language Test is like a TOEFL-Test ${ }^{10}$. Consequently, students learn listening comprehension, structure and written expression and reading comprehension.

The materials of the test do not cover essay writing and speaking tasks. The test only covers listening comprehension, grammar and structure (structure and written expression) and reading comprehension. The reasons why the testing program does not including speaking and essay tests are explained in Chapter 13. In the ELPT, structure and written expression is meant to be grammar and structure, and not essay writing. The form of the test is a multiple choice test.

Table 11.2A in Appendix 11.2A records that all six lecturers reported that students practise doing TOEFL-like exercises in English 2c, and the materials involve preparation for taking a TOEFL-like test.

[^7]
## A respondent reported that

English 2 is different from English 1. English 2 is much more specific since this focuses on preparing students for the English Foreign Language Proficiency Test. Students are given TOEFL-like materials in order that students are able to practise some exercises. (Jasmine)

This statement indicates that the learning of English 2c emphasizes preparing students for taking a proficiency test. The more students practise answering some exercises, the more students become familiar with test items. Item or task familiarity is assumed to have an effect on proficiency.
Table 11.2A in Appendix 11.2A also records that all 29 students say that English 2c focused on TOEFL-like exercises. A respondent reported that

Everybody in my class had an English book containing some exercises relating to the English Language Proficiency Test. We practised doing exercises every day and discussed the answer. (Student 20)

This statement suggests that the focus of English 2c is teaching English for preparing students to take a test as is indicated by the design of the English test materials, of English books and what students do every day in the class.

Furthermore, all 29 students report that the mode of learning English 2c, namely, a lecturer teaches the English skills separately which means that the students have the opportunity to learn listening, reading or grammar and structure in separate sessions. For example, from 14 meetings in total, students have an opportunity to learn listening on five occasions, grammar and structure in four sessions and reading in five sessions.

A respondent revealed that

> In the English book, there had been a separate session for listening, grammar and structure and reading. For example, at the first five meetings, a lecturer taught listening comprehension for five meetings. After a lecturer completed teaching listening, a lecturer taught grammar and structure for several meetings in a separate session, and then taught reading for several meetings in a separate session as well. (Student 25 )

This statement shows that the learning of English 2c takes place separately for each skill, namely, listening and reading, and for the knowledge of language, namely grammar and structure. The learning of English emphasizes improving English skill in order to meet the required standard of proficiency.

One student added that
Although the lecturer taught the skills of English separately, sometimes I learned grammar and structure through listening to and reading. This made it easier to understand what I was listening and reading. (Student 12)

This statement indicates that although the skills of English, namely listening and reading are taught separately, the lecturers are aware that it is difficult to separate the knowledge of the language from the skills of English such as listening and reading. This is particularly the case if the learners of English are learning a foreign language. Learning grammar and structure through the skills of English is likely to help students understand how the English language is structured.

## Question: How are the Skills of English Taught?

Table 11.3A in Appendix 11.3A records the results of interviews among lecturers on how the skills of English are taught. This section discusses how the skills of English, namely, listening, reading, writing, and speaking as well as knowledge of the language, namely grammar and structure, and vocabulary, are taught. This starts by discussing the skills of English taught in English 1c, followed by the further explanation of the English skills taught in English 2c. However, it is important to note that lecturers teach a variety of the English language skills and these skills are discussed and reported in the section that follows.

## Listening

Listening is one of the skills of English taught in English 1c. English 1c is an English course that is provided by the University under survey and is offered at the first and the second semester. Although listening is not the focus of English 1c, a great deal of attention is given to the students' skills in order that they are able to listen effectively.

Information obtained from the interviews record that lecturers provide a variety of ways in order that their students have many opportunities to listen in the classroom. The opportunities to listen that are recorded in Table 11.3A are: (a) teaching listening strategies, (b) practising listening in the Language Laboratory, (c) repeating listening many times in one section until familiar with the dialogue, (d) listening to a presentation, (e) listening to the lecturer, who is talking in English, (f) listening to conversation from a CD player, (g) listening to a tape recorder, (h) listening to a video, (i) listening to dictation, (j) listening to speech, and (k) watching a movie in class.

The many ways that listening is taught by lecturers are divided into two parts, namely, teaching strategies and practising listening. These parts are discussed briefly in the section that follows.

## Teaching Strategies

Respondents teach a range of listening strategies to students in order that students can comprehend what they are listening to. The purpose of teaching listening strategies is to make students aware that there are many strategies available, and that different tasks require different strategies.

A respondent commented that
I teach listening strategies in order that students are aware that there are a range of strategies that can be used to help them comprehend the task. I also teach grammar and structure through listening. (Mercury)

This statement indicates the advantages of learning listening strategies that can be used to improve student's listening comprehension.

## Practising Listening

The results of the interviews recorded in Table 11.3A in Appendix 11.3A provide many ways of how listening can be learnt. It is reported that students can practise listening comprehension at the Language Laboratory since there are many resources that can be used. All six respondents reported that they provide listening practice in a variety of ways such as repeating listening many times to one section until being familiar with the dialogue. Moreover, one of the six respondents provides the opportunity to listen in order to write and listen to speech. This means that students are given an opportunity to write about what they have heard as well as to reveal their listening ability with respect to spoken language.

A respondent commented that
Listening is the most difficult skill; I always repeat it many times in one meeting, that's why it is very time consuming to learn compared to other skills. (Sun Flower)

This statement involves actual listening practice and how difficult it is for the learners to acquire listening comprehension skills in learning English as a foreign language.

Information in Table 11.3A obtained from the focus group discussion (FGD) indicates that 28 out of 29 respondents reported on their opportunity to learn listening
at the Language Laboratory in English 1. Listening was undertaken five times in the Language Laboratory outside of the 14 meetings of English 1.There are thus five extra meetings for listening, of 60 minutes duration for each meeting. Interestingly, all 29 students reported that lecturers of English always repeated what the speakers said from the tape recorder many times.
One respondent reported that
In every listening session, my lecturer repeated what the speaker said many times until I understood what the speaker meant. If I still did not understand, I asked my lecturer to repeat again. Sometimes, I also asked my lecturer to explain what the speaker meant in order to help me understand the context. (Student 7)

This statement shows that repeating sound from an audio device such as a tape recorder helps students understand what the speaker says. This may be because students need to become familiar with the speaker's pronunciation, vocabulary and the patterns of sentence that helps them understand how the English language is structured. Moreover, a lecturer or a teacher plays an important role in order to help the students to understand the context. This may involve the context of the sentences, what patterns they form, or even the context of Western culture that is different from the context of Eastern culture. It may also be because students learn authentic materials in listening that sometimes involves the culture from another country. These materials are related to the real world.

## Reading

The results of the interviews and the focus group discussions (FGD) recorded in Table 11.3 A show that students have the opportunity to read articles about Science and Technology in English. Reading activities are divided into three sections, namely activities before reading or 'pre-reading' activities, activities during reading or 'while-reading' activities, and activities after reading or 'post-reading' activities. These divisions of reading activities are related to the tasks given to the students.

## Reading Activities

Four out of six lecturers commented that they divided reading activities into three sections, namely activities before reading, during reading and after reading. This division was considered important because it was related to the tasks given to the students in each activity.

## A lecturer commented that

When I was teaching reading, I divided reading activities into three sections, namely pre-reading activities, while-reading and post-reading activities. In prereading activities, I asked students to predict what the passage is about from the title. (Saturn)

This statement indicates that teaching reading involves not only asking students to read a passage, but teaching reading also involves the importance of systematic planning before a lecturer delivers the material. It shows that a lecturer sets different kinds of tasks that students need to do before, during and after reading.

## Pre-Reading Activities (Activities before Reading)

## Pre-Reading Tasks

The results of the interviews and the focus group discussions indicate that lecturers use a different technique for activities, such as: (a) predicting the content of a passage from the title, (b) guessing the meaning of the title in an Indonesian language, and (c) vocabulary exercises, before reading. Three out of six lecturers asked students to predict what the passage was about from the title.
A lecturer commented that
Before reading, I started by having students to predict the content of a text from the title. In this activity, students tried to recognize what a text is about from the title. (Saturn)

The statement indicates that the lecturer tries to make the reading enjoyable by sequencing a reading lesson, and this is a good start for students. Students' knowledge is activated by giving them a simple question such as predicting the content of a text from the title in order to get students involved in interesting prereading activities.

Another lecturer reported that

> I gave students small vocabulary exercises that related to a text before reading. Students were encouraged to speak in English by giving synonym words in English. Students predicted the meaning of specific words in English. This activity only took a few minutes. (Mercurius)

These statements show that a lecturer familiarizes students with the content of a text by giving systemic activities. Students build up meaning from analyzing the words in order that the students are able to work closely with a text. Moreover, this task enables students to talk in English by encouraging them to give an answer in English. It is expected that students are able to approach a text in a more confident way.

## During Reading Activities

Table 11.3A in Appendix 11.3A shows that lecturers of English do a range of different activities during reading classes. All six lecturers conduct reading aloud in the class. Four out of six lecturers follow up reading aloud by discussing what each paragraph is about with students. Three lecturers report that they ask students to retell what they had read in detail.

A lecturer reported that

> After students finished reading, I asked them to tell what the passage was about in detail. A student answered by explaining what a text was about. Another student added information about what they had read. If another student still wanted to contribute additional information, I would let him or her go. (Jasmine)

This statement indicates that some of the lecturers want to have students practise specific skills such as scanning that involved reading to extract specific information from a text.

Moreover, all six lecturers commented that there was limited time for mastering reading skills because the lecturers had to teach another skill and knowledge of the language. A lecturer reported that

> When I taught reading, time allocation for reading was limited. Because I did not only teach reading itself such as mastering reading skills or reading strategies, but I also had to teach and explain the grammar and structure, available in a text during reading. I lost some of my time improving students, reading skills. I also explained new vocabularies since my students wanted to know the meaning of the unfamiliar words. (Pluto)

This statement indicates that the majority of the lecturers do not teach specific reading strategies and reading skills during reading activities. Teaching reading skills and reading strategies take time. This implies that extra time is needed or separate time is required for helping students master reading skills and reading strategies. Reading even though it is a receptive skill involves complex knowledge, such as grammatical knowledge and lexical knowledge in order to master the skill. If students lack knowledge about grammar and structure and vocabulary, lecturers tend to explain what students want to know that results from lack of time to improve reading skills. It takes time to explain the concept of grammar and structure. Moreover, this statement shows that the learning of English, in particular, reading emphasizes bottom-up skills. Bottom-up skills involves building up meaning from words to clause to sentence to paragraph. The readers need to understand the forms of language used in a text.

## Post-Reading Activities (Activities after Reading)

Table 11.3A indicates that lecturers do a variety of activities after reading passages of text. Three out of six lecturers reported that they asked students to express ideas from what they had read in detail.

A lecturer commented that
After reading, I offered an opportunity to students to express ideas from the text. Students can share ideas such as what the text was about, what the intention of a writer was, and what the text for was. Students picked up themselves as a volunteer and answered individually. More than one person could be volunteers. (Rose)

This statement indicates that a lecturer does not only provide students with opportunities to comprehend better the text but also with opportunities to speak and listen in English and share ideas with others. This is a good idea since students are more likely to be engaged in a text if they are able to bring their own knowledge to share it with other students, and not only respond to someone else's idea. They know what they need to find out from the text that leads them to talk.
Moreover, four out of six lecturers examined students' comprehension by questioning. All six lecturers reported that they asked students to answer the detailed comprehension questions available in a course book. This activity was intended to test students' comprehension. In this situation, students read the text for themselves to answer several questions.

## Writing

Table 11.3 A records that all six lecturers and all 29 students report that there are very limited opportunities to practise writing. Only one lecturer reported that she provided an opportunity for students to create a wall magazine. Another lecturer reported that he provided the opportunity for students to write on a freely chosen topic. Interestingly, the six lecturers said that answering questions in reading comprehension was one way of giving the students the opportunity to write in English.

One lecturer commented that
Although I taught students some skills of English, there was little opportunity to write a composition. It was because the opportunity to learn English at the University was also little. There was not enough time to teach writing. (Pluto)

These statements indicate that small opportunity to learn English at the university influences opportunity to learn to write in English.

## Speaking

Table 11.3A records the results of the interviews and the focus group discussions (FGD) and reveals that students are given an opportunity to speak by providing opportunities to practise speaking and encouragement. There are a range of opportunities that can be employed to use the English language. The opportunities are: (a) presenting orally the report of extensive reading, (b) providing a student with the opportunity to be a moderator, (c) providing students with an opportunity to be a presenter, (d) presenting a topic of interest to the group, (e) conducting group discussion, (f) discussing the content of the passage with students, (g) probing questions to students and students' responses, (h) talking to students individually in the class, (i) using English as a medium of academic instruction in the class, (j) inviting a lecturer from another field of study to talk in English as a role model, and (p) inviting a guest speaker to undertake a guest lecture.

## Encouragement

In addition, lecturers encourage students to speak English in a variety of ways such as: (a) encouraging students to express their ideas individually, (b) encouraging students to share ideas with their peers, (c) retelling what they have read, (d) requiring students to tell about the day's news, and (e) encouraging students to attend a guest lecture.

One respondent reported that
I provided students an opportunity to express their ideas individually in English, for example after reading a text. I encouraged them to speak in English and I marked. (Mercury)

This statement indicates one of the many various ways that lecturers encourage their students to speak in English. A reward is given, such as a good mark, and is expected to motivate students to speak English.

## Knowledge of the Language

## Grammar and Structure

Grammar and structure involves knowledge of the language. Information obtained from the interviews and the focus group discussions (FGD) recorded in Table 11.3A show that all six lecturers and 20 out of the 29 students reported that students had an opportunity to learn grammar and structure through reading. Moreover, all of the six lecturers added that they taught grammar and structure in different ways such as: (a)
teaching grammar and structure explicitly in a separate session of reading and listening, (b) asking students to do some grammar and structure exercises for checking their level of comprehension and (c) presenting many grammar and structure test items that were more than the number of reading comprehension test items given.
Table 11.1A also records that 20 out of the 29 students reported that they learnt grammar and structure through listening.

A student commented that
My lecturer also taught grammar and structure when we practised listening at the Language Laboratory. Grammar and structure was taught through listening in addition to reading. This helped me understand what the speakers said. (Student 8)

This statement indicates that teaching grammar and structure can be done while lecturers are teaching the skills of English such as listening and reading. This is done because this helps students to understand more easily the how language is structured.

## Vocabulary

Similarly, as is seen in Table 11.3A all six lecturers reported that they taught vocabulary through listening and reading. Moreover, this was endorsed by 20 out of 29 students who revealed that vocabulary was taught while they learnt both listening and reading.

One student commented that
When I was practising listening and I was not familiar with certain words, my lecturer helped me by explaining what the words mean. (Student 17)

This statement indicates that teaching and explaining vocabulary through listening helps students understand what they are listening to.

## English 2c Course

## Listening

Information obtained from the interview that is presented in Table 11.3A in Appendix 11.3A indicates that lecturers provide a variety of ways for the students to achieve a satisfactory level of listening skill. In order to increase students' level of listening skill, it is recorded in Table 11.3A that all six lecturers teach: (a) listening strategies, (b) practising listening strategies, (c) practising listening to text, and (d) doing listening exercises. Four out of six lecturers add that they use electronic
resources, so that the students can practise listening independently, and also watch a movie in class.

The method of how listening is taught can be categorised into three parts, namely, strategies, practices, and resources. This indicates that basically lecturers teach listening both in English 1 and English 2 in the same ways. However, since the purpose of teaching English 2 is increasing students' level of English proficiency, lecturers focus more on teaching listening strategies by matching strategies with the types of test items. This is because different test items require different approaches.

One lecturer reported that

> There are different types of test items in listening comprehension test. Each item requires a different strategy. Since listening test contained different items, different strategies needed to be taught to students in order that they understood when and how the strategies were used. (Sun Flower)

This statement indicates that the same strategies cannot be used to answer a different type of test item since different items require different approaches. Moreover, four out of the six lecturers report that pointing to some electronic resources is one way to help students increase their listening skills.

A respondent reported that
There are a large number of listening resources available through the internet. I point to electronic resources that can be accessed by students independently. They can practise it outside the classroom. (Rose)

This statement indicates that lecturers encourage students to practise listening independently by pointing to freely-accessed electronic resources.

## Reading

Information obtained from the interviews and focus group discussions (FGD) record that there are also a variety of forms of opportunity to read available to respondents. Table 11.3A shows a range of opportunities to read. The opportunities to read can be classified into five forms, namely, teaching strategies, practising strategies, doing exercises, extensive reading, and resources. These categories of classification are reported and discussed in the section that follows.

## Teaching Strategies and Practising Strategies

Similar to the opportunities to listen provided by the teachers for students, the results of the interviews also record that all six respondents teach students specific reading
strategies and provide exercises to practise these strategies. The strategies include skimming, scanning, note-taking and writing the important points.

A respondent commented that
I teach them reading strategies and practise the strategies such as skimming and scanning with students. I ask them to read paragraph by paragraph and we discuss those paragraphs one by one. (Mercurius)

This statement indicates that teaching students a range of strategies helps them to construct meaning and to comprehend text. This is aimed at assisting students to acquire meta-cognitive awareness and gain conscious control over their learning. Research identifying meta-cognitive reading skills associated with reading comprehension makes teachers aware of the need to teach students reading strategies (Baker, 2002).

Moreover, all six lecturers and 27 out of 29 students reported that reading was taught generally in a separate session from the other language skills, namely, listening, writing, and speaking.

## Doing Exercises

Information obtained from the interviews and focus group discussions (FGD) shows that all six lecturers comment that in each reading class, they ask students to do some reading exercises in order to check the students' powers of comprehension. They subsequently discuss the correct answer. Similarly, all 29 students report doing these exercises. This indicates that students frequently practise doing exercises in order that they become familiar with the different types of test items.

## Extensive Reading

The results of the interviews presented in Table 11.3A indicate that 28 out of 29 students choose to undertake extensive reading in the form of reading a journal article for their final project, while 25 out of 29 students also read textbooks in English for their project. Extensive reading means that students have the opportunity to read a long passage that is undertaken outside of the English classroom. This is not surprising since students who are enrolled in English 2 are mostly students who are also working on their final project. Therefore, they have much to read.

A respondent commented that
I read some articles in English for my project. Although my project was written in Bahasa Indonesia, some information about my project was mostly found in English. (Mercurius)

In addition the students' responses indicate that questioning is one of the teaching strategies that is used to check students' comprehension of what they have read.

Moreover, all 29 students report that they find reading easier than listening because they can read a text and reread the text again and again.

## Resources

Similar to opportunity to listen, information obtained from the interviews report that four out of the six lecturers point to interactive reading resources from a website in order that students can practise independently the learning of reading skills outside of classroom activities.

A respondent reported that
I introduce students to an interactive reading website. In this link students can read a text independently, do some exercises and know the answers whether right or not straightaway. Students also have an opportunity to check their score directly. (Saturn)

This statement shows that interactive reading from a website provides opportunities for learners to read and to do some exercises as well as to check their answers and their results independently.

## Structure and Written Expression

Information obtained from the interviews indicates that all six lecturers teach and explain the patterns of appropriate grammar explicitly in a separate session from other English language skills. Moreover, it is reported by all six lecturers that although grammar and structure are taught in separate sessions from listening and reading, lecturers also teach and explain grammar and structure through the skills of listening and reading. All 29 students report that the teachers teach in this way.

Practising grammar and structure exercises is also the common way in which grammar and structure is taught by the six lecturers. Thus all lecturers teach grammar and structure in a variety of ways such as: (a) teaching grammar explicitly in a separate session, (b) teaching grammar through reading, and (c) teaching grammar through listening, as well as (d) explaining and discussing the correct answer. In addition, 28 out of 29 students reported that they were confused by the grammar and structure of the English language since there were many patterns to be learnt and remembered. Moreover, all students commented that they were often confused when they were doing grammar and structure exercises.

One respondent commented that
The patterns of grammar and structure in English were many. It is difficult to remember these patterns. When I was doing some exercises, the test was very complex because of many types of patterns emerged in the test. I was confused on which pattern the item classified. (Student 9)

This indicates that aspects of grammar and structure lead to item complexity and item difficulty. By its complexity there are a number of factors that influence the responses to the items. Item difficulty is the percentage of students who answer the items correctly.

## Summary

This chapter reports how the course is structured by each of the providers of the course in the University under survey. Two courses, namely, English 1c and English 2c are conducted in the University. However, these two courses are presented in different ways. These differences can be seen from three different features of the courses: (a) type of English taught, (b) what lecturers teach, and (c) how English is taught.

Information obtained from the interviews and focus group discussions shows that there are differences in the type of English taught to students. Students are taught general English for English 1c, while in English 2c students are prepared to sit a test. Since English 1c is taught as general English, there is no specific basis for the teaching and learning of the English language for both teachers and students. The purpose of English 1c is not English for Specific Purposes (ESP), but rather introducing the four skills of the English language to students. English 2c has a more specific purpose since the teaching and learning of English 2c is directed towards students' preparation for sitting a test.

Although generally, students are introduced to the four skills of English, namely listening, speaking, writing, and reading, English 1c emphasizes more the teaching of Writing (Grammar and Structure) and Listening than the teaching of reading and speaking. The results of the interviews and the focus group discussions (FGD) indicate that students have a variety of ways to practise listening and its strategies while these opportunities do not occur for reading. These opportunities can help students to increase their scores to a higher level in listening than in reading. Moreover, students have many opportunities to learn grammar and structure through
listening and reading. This indicates that students are given opportunities to learn grammar and structure not only by explicit instruction, in which there is a separate session for teaching and learning grammar and structure, but students also learn grammar and structure through other skills, and this helps students become more familiar with both grammar and structure. The familiarity and many opportunities given to learning grammar and structure helps students to increase their writing (grammar and structure) skills as well as their scores on the English Language Proficiency Test.

In English 2c, students are given many opportunities to do English Foreign Language Proficiency exercises. The emphasis in English 2c is on test-taking, and not on the development of the skills of the English language. It can be seen from the ways lecturers teach English and what students do in class. Since English 2c has an emphasis on test-taking, lecturers teach the strategies for doing a test through both listening and reading. Students are introduced to these strategies and they practise these strategies by doing exercises. This is followed up by discussing the correct answer. Although writing (structure and written expression) is also taught, apparently the lecturers do not emphasize writing. The instruction in English 2c apparently has more emphasis on listening and reading than on writing (structure and written expression).

It can be summarized that the courses can specifically be defined as having strong, moderate, or weak effects on English Language Proficiency.

The findings of Chapters 9,10 , and 11 are needed for both the discussion and the interpretation of results in Chapters 12, 13, 14, and 15 with respect to Reading, Writing, and Listening, and with respect to Aptitude (Initial Performance), Ability, Perseverance or Motivation, Quality of Instruction, and Opportunity to Learn in Course 1 (English 1c) and Course 2 (English 2c).

## CHAPTER 12 FACTORS INFLUENCING STUDENT PROFICIENCY IN ENGLISH AND GRADE POINT AVERAGE

## Introduction

This investigation employs a number of data analysis procedures in order to address adequately the research questions. Partial Least Squares Path Analysis (PLSPATH) (Sellin, 1990) is applied initially to identify in an exploratory way the variables that have significant direct and indirect effects on English Language Proficiency and the learning outcome of Grade Point Average on completion of the University course. Therefore, it is first necessary to consider the construction of a model that examines the relationships between the causal factors that influence English Language Proficiency as well as the final Grade Point Average. Models of the student-level factors influencing student achievement in English examined in this chapter are developed from the findings of previous studies and knowledge of the context. However, the factors are limited to those with data recorded in the university database. Since the nature of the models proposed in this study is exploratory, many variables that are likely to have an influence on student achievement in English are hypothesized in the models. The aim of exploration is to identify what are the significant factors at the student level that affect students' performance in English. Consequently, consideration of an appropriate exploratory multivariate technique to analyze the models is required. In order to examine causal relationships, such as the ones proposed in this study, the Partial Least Squares Path Analysis (PLSPATH 3.1) program is used as an exploratory technique (Sellin \& Keeves, 1994).

In this chapter the primary focus is on the main results of the analyses using the PLSPATH 3.1 (Sellin, 1989) program to test the model presented in Figure 12.2. In particular, the purposes of this chapter are to examine:
(a) student level factors influencing English Language Proficiency at the University level;
(b) student level factors influencing the learning outcome (Grade Point Average, GPA) at the University level; and
(c) factors influencing the English Language Proficiency Test (ELPT) at the University level.

Consequently, there are three sets of results that are reported as the findings of the PLSPATH analyses in this chapter:
(a) the results using Model 1 from the analyses of the student-level factors influencing English achievement using PLSPATH;
(b) the results using Model 2 from the analyses of the student-level factors influencing the student learning outcome GPA;
(c) the results using Model 3 from the analyses of the factors influencing the English Language Proficiency Test (ELPT).

The results for (a) and (b) are contained in a single complex model. Although Models 1 and 2 are built into one complex diagram, there is also a model that examines a different number of cases for each model, namely: (i) a model that has 3995 cases, and (ii) a model that has 1978 cases. The purpose of examining these two different models is to provide replication, as to whether they are different or whether they are similar to each other.

## Dataset Used in this Study

However, the models examined in this chapter are tested using one large dataset that is separated into two main data files. The separation of the dataset is carried out because there are several variables of interest that have considerable missing data. In order that the data can be subjected to the statistical analyses, the decision is made to separate the original large dataset into two main data files. This problem is illustrated in Figure 12.1.

This problem arises because in the recording of the data that forms the variable English Language Proficiency Test (ELPT), both IRT-scaled scores with a mean of 50 and a standard deviation of 10 , as well as Grade-scaled scores are employed. However, for approximately half of the sample of 5597 students who completed the course with a Grade Point Average the Grade-scaled scores for ELPT ranging from 1 to 4 are recorded, and the IRT-scaled scores are not recorded on the University files. For the other half of the sample both sets of scores are recorded. Thus two overlapping samples can be formed, namely: (a) those students who have only Grade-scaled scores for ELPT; and (b) those students who have both Grade-scaled scores and IRT-scaled scores. Moreover, both groups of students have some data missing on other variables that are being employed in these analyses. Under these circumstances a decision is made to refrain from using any imputation procedures for the replacement of missing data on all variables involved in the analyses or to use pairwise procedures in the calculation of correlations, but to employ the listwise procedure (Hair, Tatham, Anderson, Black,
2006). As a consequence there are considerable losses of cases in both groups (a) and (b). Group (a) has complete data for 1978 cases and Group (b) has complete data for 3995 cases. Group (a) forms approximately 40 per cent, and Group (b) forms approximately 80 per cent of the initial number of cases in the original dataset. However, the two samples provide the opportunity to employ replication procedures in the analyses of the data in an exploratory way, in order to examine the strength of the data available. The treatment of the data to be used in the study is illustrated in Figure 12.1. This figure also shows the separated reporting of the analyses in Chapters 12 and 13.


Figure 12.1 The Data File Problem

Figure 12.1 indicates a drop in the number of cases in the Grade score sample from 5597 to 3995 , while a drop in the number of cases in the IRT score sample to 1978
refers to data that are not recorded systematically or data are missing. Key samples are boxed with double colour lines. Blue lines indicate the two original large files, while the red lines indicate the four sub-files employed in analyses. Figure 12.1 shows that there are several steps that are necessary to separate the one large dataset into the two data files, namely Grade score sample and IRT score sample.

1. Treat the missing values for each variable at the same time (concurrently) in a single main dataset by employing the listwise procedure for treating the missing data for each dataset.
2. Separate the initial large single data set into four clean main files: (a) a file that comprises student level factors influencing English Language Proficiency and the student learning outcomes (GPA) with 3995 cases; (b) a file that contains student level factors that influence English Language Proficiency with 1978 cases; (c) a file that contains student level factors that influence English Language Proficiency with 1978 cases, and is scaled with IRT-scaled scores; and (d) a file that consists of several variables that relate to English Language Proficiency, and is identified as the IRT score sample with 1978 cases and is scaled with IRT-scaled scores.
3. Build four independent datasets for these four files.
4. Prepare four clean datasets: (a) dataset that consists of student level factors that influence English Language Proficiency and student learning outcome for 3995 cases and for the Grade-scaled score; (b) dataset that contains student level factors that influence English Language Proficiency with Grade-scaled scores and variables for Grade-scaled score data, and not IRT-scaled score data for 1978 cases; (c) dataset that consists of student level factors that influence English Language Proficiency with IRT-scaled scores for 1978 cases; and (d) dataset that examines variables that relate to English Language Proficiency Test (ELPT) for 1978 cases and for the IRT-scaled scores. The reduced number of cases is because of the need to remove 2017 cases that have data with missing values for those variables that involve IRT-scaled scores for ELPT.

However, only the first three files (dataset) are considered in this chapter. The last dataset is discussed in the next chapter involving further analyses and the inclusion of additional variables. This dataset is used for the examination of the relationships between factors PRETEST, NOSTIC, and ELPT that are discussed in Chapter 13, together with the inclusion of additional variables. In summary, there are two large data files that are employed for examining the models using the PLSPATH analysis. These are: (a) data file with 3995 cases; and (b) data files with 1978 cases.

## Grade Score Sample and IRT Score Sample

However, these two data files mentioned above (a and b) essentially have different numbers of cases: these are 3995 and 1978. Because there are two large data files with different sample sizes, these files are given names: (a) Grade score sample (large sample $\mathrm{n}=3995$ ), and (b) IRT score sample (smaller sample $\mathrm{n}=1978$ ). Both samples are
submitted to analyses wherever possible, and the results of the analyses serve the purposes of replication of the findings of this study. While the findings may be different in certain respects they are, in general, sufficiently similar in many respects for the results from the analyses to be recorded side by side and the discussion of the results to consider both samples together. This difference between the two samples is not a consequence of the selection process but merely the result of a shortcoming in the entry of scores into the University files. It must also be noted that many of the other variables do not have complete data and the two sets of data are analyzed using listwise deletion procedures where necessary at specific stages in the analyses of the data. The decision to employ listwise deletion of cases in these analyses is made because of the large samples used in the analyses and the desirability of the different programs employed to examine identical files for the two sets of data available.

## Developing a Student-Level Model Using PLSPATH

In this section a description of the development of the student- level models is given and the results are discussed. First the process of developing the model is briefly considered and this is followed by the separate discussions of the results of the outer and inner model analyses using PLSPATH. For an initial introduction to the PLSPATH program see Sellin and Keeves (1997).

The model of student level factors influencing English Language Proficiency that is developed in this chapter indicates that there are several variables derived from previous research that are hypothesized to influence English Language Proficiency and student learning outcomes. It is argued in Chapter 8 that there is much work to be done in the process of data preparation prior to being able to run the PLSPATH model. The work starts with the running of Descriptive Statistics to examine the frequency distributions and the means and standard deviations, cleaning the dataset to examine how much of the data are missing, treating categorical variables in order that they can be subjected to the statistical analysis and conducting correlation analyses in order to generate and employ a correlation matrix in subsequent analyses. It is important to note that much of the data are categorical in nature, and a discussion of the way these data are treated using criterion scaling and rank-scaled scores is provided in Chapter 8 and Appendix 8 A .

## Correlation Analysis

The purpose for conducting the correlation analysis is to identify factors or variables that have likely causal relationships with English Language Proficiency and GPA. However, the purpose of the correlation analysis is only for looking at the magnitudes of the relationships, and not for looking at their direction of operation and their statistical significance. Correlation analysis is an important step that needs to be done before including all likely variables in the starting model of the PLSPATH analysis. A variable is identified as being likely to have a significant relationship if this variable has an estimated correlation with an absolute value that is equal to a greater than 0.10 . This value of 0.10 is chosen as an appropriate effect size because information is not available to estimate accurately an appropriate standard error for use in testing for statistical significance or for the calculation of the design effect of the sample (see Sellin and Keeves, 1997).

In Table 12.1 the product moment correlation coefficients for the Grade score sample ( $\mathrm{n}=3995$ ) and IRT score sample ( $\mathrm{n}=1978$ ) are given, with the coefficients for the Grade score sample recorded in the upper triangle on the right-hand side of the table and the coefficients for the IRT score sample recorded on the left-hand side of the table in the lower triangle. Table 12.1 presents the correlations between all the student background variables and the English scores and GPA scores. It is seen in Table 12.1 that there are four LVs (latent variables), namely, (a) Socio-economic Status (SES ${ }^{11}$ ), (b) Student Prior Achievement (PRIOR), (c) Faculty of Instruction (FACULTY), and (d) Score of English 1t (ENGLISH_1) that have correlations in excess of 0.10 with English Language Proficiency (ENGLISH_2) in both samples, namely, the Grade score and the IRT score samples. The LV Age at the completion of the course (AGE_END) has an effect on English Language Proficiency (ENGLISH_2; r=-0.19) that is recorded for the Grade score sample, while the LV Semester in which students enrol in English 2c (SEMESTER) has an influence on English Language Proficiency (ENGLISH_2; $\mathrm{r}=0.10$ ), but is only recorded for the IRT score sample. The highest correlations with English 2 score in Grade score sample are found for student prior achievement (PRIOR; $\mathrm{r}=0.23$ ) and score of English 1t (ENGLISH_1; r=0.23), while the highest correlations with English $2 t$ score in the IRT score sample are found for Faculty of Instruction (FACULTY; r=0.22) and score of English 1 (ENGLISH_1; r=0.21).

[^8]Table 12.1 Correlations between Latent Variables at the Student Level for Grade Score Sample (n=3995) and Rasch Score Sample (n=1978)

|  | GENDER | AGE_BEGIN | AGE_END | SES | PRIOR | FACULTY | SELECT | ENGLISH_1 | YEAR | BAHASA | SEMESTER | ENGLISH_2 | GPA |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GENDER | 1 | * | -0.10 | * | * | * | * | * | -0.19 | 0.12 | -0.12 | * | 0.16 |
| AGE_BEGIN | -0.11 | 1 | 0.46 | -0.15 | -0.14 | * | * | * | * | * | * | * | * |
| AGE_END | -0.21 | 0.54 | 1 | -0.14 | -0.51 | 0.15 | -0.10 | -0.12 | 0.27 | * | 0.61 | -0.19 | -0.19 |
| SES | * | -0.13 | * | 1 | * | 0.14 | -0.33 | * | * | * | * | 0.18 | * |
| PRIOR | 0.13 | -0.11 | -0.50 | * | 1 | * | 0.24 | 0.33 | $-0.17$ | * | -0.45 | 0.23 | 0.38 |
| FACULTY | * | * | * | 0.14 | * | 1 | $-0.26$ | 0.15 | 0.25 | 0.18 | 0.22 | 0.20 | 0.20 |
| SELECT | 0.10 | * | -0.11 | $-0.37$ | 0.30 | -0.29 | 1 | 0.16 | $-0.13$ | * | -0.18 | * | 0.17 |
| ENGLISH_1 | * | * | -0.20 | * | 0.37 | 0.12 | 0.18 | 1 | * | 0.17 | -0.15 | 0.23 | 0.36 |
| YEAR | -0.19 | * | 0.13 | * | -0.13 | 0.19 | -0.12 | * | 1 | 0.16 | 0.24 | * | * |
| BAHASA | * | * | * | * | * | 0.14 | * | 0.16 | 0.14 | 1 | * | * | 0.29 |
| SEMESTER | -0.15 | * | 0.49 | * | -0.44 | 0.23 | -0.17 | -0.22 | * | * | 1 | * | -0.29 |
| ENGLISH_2 | * | * | * | 0.15 | 0.17 | 0.22 | * | 0.21 | * | * | 0.10 | 1 | 0.13 |
| GPA | 0.12 | * | -0.27 | * | 0.44 | 0.17 | 0.22 | 0.38 | * | 0.27 | -0.34 | 0.16 | 1 |

*: Correlation is less than 0.10. Upper triangle - Grade Score Sample, Lower triangle - IRT Score Sample.

Table 12.1 also shows that for the Grade score sample, there are nine LVs (latent variables), namely, (a) Sex of student (GENDER; r=0.16), (b) Age at the completion of the course (AGE_END; r=-0.19), (c) Student Prior Achievement (PRIOR; r=0.38), (d) Faculty of Instruction (FACULTY; r=0.20), (e) Method of Student Selection (SELECT; r=0.17), (f) Score of English 1 (ENGLISH_1; r=0.36), (g) Score of Bahasa Indonesia (BAHASA; r=0.29), (h) Semester in which students enrol in English 2c (SEMESTER; r=-0.29), and (i) Score of English 2c (ENGLISH_2; r=0.13), that have a correlation greater than 0.10 with student learning outcome (GPA).
For the IRT score sample, there are also nine LVs (latent variables), namely, (a) Sex of student (GENDER; r=0.12), (b) Age at the completion of the course (AGE_END; r=-0.27), (c) Student Prior Achievement (PRIOR; r=0.44), (d) Faculty of Instruction (FACULTY; r=0.17), (e) Method of Student Selection (SELECT; r=0.22), (f) Score of English 1t (ENGLISH_1; r=0.38), (g) Score of Bahasa Indonesia (BAHASA; r=0.27), (h) Semester in which students enrol in English 2c (SEMESTER; r=-0.34), and (i) Score of English 2 (ENGLISH_2; r=0.16), that have a correlation greater than 0.10 with student learning outcome (GPA).

Table 12.1 shows that the highest correlations with GPA score are found for student prior achievement (PRIOR) and score of English 1t (ENGLISH_1) with correlation coefficients of 0.38 and 0.36 for the Grade score sample and of 0.44 and 0.38 for the IRT score sample.

## Variables Included in the PLSPATH Analysis

Table 12.2 records latent and manifest variables included in the PLSPATH analysis. Table 12.2 shows a list of variables operating at the student level. Both variable names and their acronyms are recorded for the latent variables and the manifest variates involved. For two of the latent variables, namely, SES and PRIOR the outward mode is necessarily employed since these variables are reflected by the manifest (observed) variates that are involved. The variables GENDER, AGE_BEGIN, AGE_END, FACULTY, SELECT, ENGLISH_1, YEAR, BAHASA, SEMESTER, ENGLISH_2, and GPA are all in the unity mode.
Figure 12.2 presents the hypothesized path model for the analysis of the data sets using the PLSPATH computer program. Six variables on the left hand side of the figure, namely, SEMESTER, AGE_END, GENDER, AGE_BEGIN, SES and YEAR are categorized as exogenous variables (independent variables) since they are
not influenced by other variables, but they may influence other variables. In the path model, these variables are hypothesized to influence the latent variables to their right. This is indicated by the arrow that goes from these exogenous variables to the other variables, while there is no arrow coming to them.

Table 12.2 Latent and Manifest Variables Included in Student Level Analysis

| Latent Variable | Manifest Variate |  | Source | Coding | Mode |
| :---: | :---: | :---: | :---: | :---: | :---: |
| (Acronym) | Acronym | Description |  |  |  |
| Sex of Student GENDER | Sex | Sex of student | File | $\begin{aligned} & 0=\text { male }, \\ & 1=\text { female } \end{aligned}$ | Unity |
| Time_Begin AGE_BEGIN | Time_Begin | Age at the beginning of the course | File | Rank-scaled score | Unity |
| Time_End AGE_END | Time_End | Age at the end of the course |  | Rank-scaled score | Unity |
| Socio-economic Status SES | Focc <br> Mocc <br> Psal | Father Occupation <br> Mother Occupation <br> Parent Salary | File | Criterion <br> Scaling <br> Rank-scaled score | Outward |
| Prior Achievement PRIOR | Physic <br> Math <br> English | Physics Score <br> Mathematics Score <br> English Score | File | Continuous score | Outward |
| Faculty FACULTY | Faculty | Faculty in which student affiliates |  | Criterion Scaling | Unity |
| Mode of Selection SELECT | Selection | Method of Student Selection | File | Criterion Scaling | Unity |
| English_1 <br> ENGLISH_1 | Score Eng_1 | English_1 Score | File | Rank-scaled score | Unity |
| Year <br> YEAR | Year | Year in which students enrolled in Bahasa | File | Rank-scaled score | Unity |
| Bahasa Indonesia BAHASA | Score_BAH | Bahasa Score | File | Rank-scaled score | Unity |
| Semester SEMESTER | Semes | Semester in which students took English_2 | File | Rank-scaled score | Unity |
| English Proficiency <br> ENGLISH_2 | ENG_Proficiency | English_2 Score | File | Rank-scaled score | Unity |
| Grade Point Average GPA | Score_GPA | Student Learning Outcome | File | Rank-scaled score | Unity |

Figure 12.2 shows that there are nine variables hypothesized to influence English Language Proficiency (ENGLISH_2), namely sex of student (GENDER), age of student at the beginning of the course (AGE_BEGIN), socio-economic status (SES), student's prior achievement (PRIOR), faculty in which students study (FACULTY), method of student selection (SELECT), English 1 score (ENGLISH_1), Bahasa score (BAHASA), and the semester in which the students enrolled in English 2 (SEMESTER). In the path models, all these variables are treated as latent variables (LVs), and in this study all variables are reflected by one or more manifest variates (MVs). There are only two latent variables that are reflected by more than one manifest variate, namely socio-economic status (SES) and achievement before entering university (PRIOR). Table 12.3 records ten scaled variables that are included in the analysis, together with the coding of the categories.


Figure 12.2 Path Model with Latent Variables for the Exploratory Examination of English Achievement and GPA (Student Learning Outcome)

| Description | Final Group | Measurement | Final Code | GPA |  | English 2 |  | Scaling Base | Scaled variables | 268 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | N | Mean | N | Mean |  |  |  |
| Father Occupation (Focc) | Labourer | Occupational status | 1 | 113 | 3.04 | 106 | 2.61 | International Grouping | International scaling |  |
|  | Farmer, Fisherman | Occupational status | 2 | 406 | 3.14 | 380 | 2.50 | International Grouping | International scaling |  |
|  | Clerical | Occupational status | 3 | 3606 | 3.11 | 3449 | 2.80 | International Grouping | International scaling |  |
|  | Self-Employed | Occupational status | 4 | 620 | 3.14 | 590 | 2.80 | International Grouping | International scaling |  |
|  | Teacher | Occupational status | 5 | 709 | 3.12 | 684 | 2.74 | International Grouping | International scaling |  |
|  | Managerial, Professional | Occupational status | 6 | 140 | 3.10 | 126 | 2.43 | International Grouping | International scaling |  |
| Total |  |  |  | 5597 | - | 5335 | - |  |  |  |
| Missing |  |  |  | - | - | 262 | - |  |  |  |
| Mother Occupation (Mocc) | Labourer | Occupational status | 1 | 24 | 3.02 | 22 | 2.43 | International Grouping | International scaling |  |
|  | Farmer, Fisherman | Occupational status | 2 | 252 | 3.12 | 239 | 2.51 | International Grouping | International scaling |  |
|  | Clerical | Occupational status | 3 | 3858 | 3.11 | 3680 | 2.79 | International Grouping | International scaling |  |
|  | Self-Employed | Occupational status | 4 | 383 | 3.16 | 364 | 2.74 | International Grouping | International scaling |  |
|  | Teachers | Occupational status | 5 | 996 | 3.13 | 954 | 2.74 | International Grouping | International scaling |  |
|  | Managerial, Professional | Occupational status | 6 | 84 | 3.14 | 76 | 2.49 | International Grouping | International scaling |  |
| Total |  |  |  | 5597 | - | 5335 | - |  |  |  |
| Missing |  |  |  | - | - | 262 | - | GPA Performance/ English 2 | Criterion scaling |  |
| Faculty (Faculty) | Marine Engineering | Faculty of Instruction | 1 | 689 | 3.05 | 650 | 2.58 | GPA Performance/ English 2 | Criterion scaling |  |
|  | Mathematics and Science | Faculty of Instruction | 2 | 931 | 3.07 | 887 | 2.51 | GPA Performance/ English 2 | Criterion scaling |  |
|  | Civil and Planning Engineering | Faculty of Instruction | 3 | 1447 | 3.09 | 1370 | 2.72 | GPA Performance/ English 2 | Criterion scaling |  |
|  | Industrial Engineering | Faculty of Instruction | 4 | 1901 | 3.14 | 1827 | 2.84 | GPA Performance/ English 2 | Criterion scaling |  |
|  | Informatics Engineering | Faculty of Instruction | 5 | 629 | 3.24 | 601 | 3.13 | GPA Performance/ English 2 | Criterion scaling |  |
| Total |  |  |  | 5597 | - | 5335 | - |  |  |  |
| Missing |  |  |  | - | - | 262 | - |  |  |  |
| Mode of Selection (Select) | Industrial Partnership | Method of Selection | 1 | 691 | 3.00 | 665 | 2.90 | GPA Performance/ English 2 | Criterion scaling |  |
|  | National Selection | Method of Selection | 2 | 4115 | 3.12 | 3907 | 2.74 | GPA Performance/ English 2 | Criterion scaling |  |
|  | Invitation | Method of Selection | 3 | 668 | 3.17 | 650 | 2.69 | GPA Performance/ English 2 | Criterion scaling |  |
|  | Other(Scholarship and Achievement) | Method of Selection | 4 | 123 | 3.25 | 113 | 2.91 | GPA Performance/ English 2 | Criterion scaling |  |
| Total |  |  |  | 5597 | - | 5335 | - |  |  |  |
| Missing |  |  |  | - |  | 262 | - |  |  |  |
| Semester (Semester) | Year 1 and 2 (semester 2, 3, 4) | Year Grouping | 1 | - | - | 219 | 2.96 | English 2 | Rank-scaled score |  |
|  | Year 3 (semester 5, 6) | Year Grouping | 2 | - | - | 1412 | 2.80 | English 2 | Rank-scaled score |  |
|  | Year 4 (semester 7, 8) | Year Grouping | 3 | - | - | 2965 | 2.76 | English 2 | Rank-scaled score |  |
|  | Year 5 (semester 9, 10) | Year Grouping | 4 | - | - | 584 | 2.65 | English 2 | Rank-scaled score |  |
|  | More than Year 5 (semester 11 17) | Year Grouping | 5 | - | - | 155 | 2.54 | English 2 | Rank-scaled score |  |
| Total |  |  |  | - | - | 5335 | - |  |  |  |
| Missing |  |  |  | - | - | 262 | - |  |  |  |

Table 12.3 continue

| Description | Final Group | Measurement | $\begin{aligned} & \text { Final } \\ & \text { Code } \end{aligned}$ | GPA |  | English 2 |  | Scaling Base | Scaled variables |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | N | Mean | N | Mean |  |  |
| Parent Salary (Psal) | <0.25 and 0.25-0.50 | Salary Grouping | 1 | 533 | 3.14 | - | - | Money Value | Rank-scaled score |
|  | 0.50-1.00 | Salary Grouping | 2 | 1085 | 3.12 | - | - | Money Value | Rank-scaled score |
|  | 1.00-2.50 | Salary Grouping | 3 | 2486 | 3.12 | - | - | Money Value | Rank-scaled score |
|  | $2.50-5.00$ | Salary Grouping | 4 | 937 | 3.11 | - | - | Money Value | Rank-scaled score |
|  | 5.00-7.50 | Salary Grouping | 5 | 221 | 3.09 | - | - | Money Value | Rank-scaled score |
|  | 7.50-10.0 and >10.0 | Salary Grouping | 6 | 183 | 3.07 | - | - | Money Value | Rank-scaled score |
| Total |  |  |  | 5445 | - | 5187 | - |  |  |
| Missing |  |  |  | 152 | - | 410 | - |  |  |
| Age Begin | $<18$ | Year of Age | 1 | - | - | 356 | 3.00 | Year Order | Rank-scaled score |
|  | 18 | Year of Age | 2 | - | - | 3168 | 2.79 | Year Order | Rank-scaled score |
|  | 19 | Year of Age | 3 | - | - | 1567 | 2.66 | Year Order | Rank-scaled score |
|  | >19 | Year of Age | 4 | - | - | 244 | 2.64 | Year Order | Rank-scaled score |
| Total |  |  |  | - | - | 5335 | - |  |  |
| Missing |  |  |  | - | - | 260 | - |  |  |
| Age End | $<23$ | Year of Age | 1 | 356 | 3.20 | - | - | Year Order | Rank-scaled score |
|  | 23 | Year of Age | 2 | 941 | 3.19 | - | - | Year Order | Rank-scaled score |
|  | 24 | Year of Age | 3 | 1519 | 3.15 | - | - | Year Order | Rank-scaled score |
|  | 25 | Year of Age | 4 | 1438 | 3.11 | - | - | Year Order | Rank-scaled score |
|  | $26$ | Year of Age | 5 | $817$ | $3.06$ | - |  | Year Order | Rank-scaled score |
|  | >26 | Year of Age | 6 | 526 | 2.93 | - | - | Year Order | Rank-scaled score |
| Total |  |  |  | 5596 |  | - | - |  |  |
| Missing |  |  |  | 1 |  | - | - |  |  |
| Year | Year 1 (semester 1,2) | Year Study | 1 | 1713 | 2.80 | - | - |  |  |
|  | Year 2 (semester 3,4) | Year Study | 2 | 1771 | 2.79 | - | - | Year Order | Rank-scaled score |
|  | Year 3 (semester 5,6) | Year Study | 3 | 567 | 2.83 | - | - | Year Order | Rank-scaled score |
|  | Year 4 (semester 7,8,9,10,11) | Year Study | 4 | 832 | 3.22 | - | - | Year Order | Rank-scaled score |
| Total |  |  |  | 4883 |  |  |  |  |  |
| Missing |  |  |  | 714 |  |  |  |  |  |

Therefore, in the examination of student level factors influencing student proficiency in English, there are 9 Latent Variables (LVs) and 16 Manifest Variates (MVs) presented in the path model. Although there are two main data files ( $\mathrm{n}=3995$ and $\mathrm{n}=$ 1978) that are examined, the results of the PLSPATH analysis in this section are reported concurrently for comparisons between the two sets of results.

## Results from the Student Level Factors Influencing English Language Proficiency

The results of the PLSPATH final model follow and are reported first for the results of the outer model analysis in Table 12.4 and followed by the report of the results of the inner model analysis in Table 12.5. There are two main parts of the examination. The first part reports the results of the outer model for student level factors influencing English Language Proficiency and examines the strength of the relationships between the manifest variates and their corresponding latent variables. The second part reports the results for the inner model, which examines the strength of the relationships between each latent variable and the other latent variables.

## Outer Model Results for the Student Level Factors Influencing English Achievement <br> Grade Score Sample

The outer model specifies the relationships between the MVs and the LVs (Sellin, 1989). The PLSPATH program assesses the strengths of the relationships between the MVs and their corresponding LVs. Five indices form the outer model results and these indices are recorded for examining the strengths of the relationships.

The first index is the weight that indicates the strength of the regression type relationship between a MV and a LV with the inward mode considered significant if the value of the weight is equal to or larger than 0.10 (Sellin and Keeves, 1997).

The second index is the factor loading which indicates the strength of relationships in the outward mode. The strength of a relationship between a MV and the corresponding LV in the outward mode is considered significant if the value of the loading is equal to or larger than 0.30 , or more conservatively 0.40 is sometimes used (Falk, 1987).

The next index is the communality which indicates the strength of the outer model. Communality is described as the average of the squared correlations between MVs and their corresponding LVs and it reflects "the predictive power of outer model relationships" (Sellin, 1989). It has been argued that the overall strength of the outer model was best measured by the average of the communalities (Falk, 1987). Falk (1987) further noted that the higher the average for this communality index, the better the outer model. However, he argued that an average of the communalities value of 0.30 would generally be considered too low.

The fourth index is the redundancy which is the squared correlation between MVs and LVs connected indirectly through the inner model relationships. Sellin (1989, p.7) stated that the redundancy reflected "the joint predictive power of inner model and outer model relationships as estimated for a given data set". In addition, Kotte (1992) argued that a high redundancy value could be taken as a possible misplacement of that MV in relation to the LVs that it formed or reflected.

The last index presented in the outer model results is the tolerance, which is the squared correlation between a given MV and the remaining MVs belonging to the same LV (Sellin, 1989) who argued that the tolerance was used as an index to measure possible multicollinearity within the corresponding block of MVs. Afrassa (1998, p.217) suggested that a tolerance value of 0.50 or higher "indicates possible multicollinearity and the variables involved should be considered with caution particularly in the inward mode".

The discussion of the strengths of relationships between LVs, recorded in bold and capital type, and their corresponding MVs, recorded in lower case and plain type, is presented in the section that follows. Table 12.4 presents the outer model results for student level factors influencing student achievement in English for the Grade score sample ( $\mathrm{n}=3995$ ) and the IRT score sample ( $\mathrm{n}=1978$ ).

## Gender of Student (GENDER)

Gender of student (GENDER) as a latent variable is formed out of a single manifest variate, namely student sex. The data for this variable are dichotomous, with male
entered as zero (0) and female as one (1). In the model, student sex is described as the reflective indicator of the LV GENDER in the unity mode.

## Age at the Initial Stage of the University Course (AGE)

Age at the beginning of the course (AGE_BEGIN) as a latent variable is formed out of a single manifest variate, namely the age of the student (Time Begin). The value of Age at the beginning of the University course is formed as a Rank-scaled score as is discussed in Chapter 8. In the model, the student age variate (Time Begin) is shown as the reflective indicator of the LV AGE_BEGIN in the unity mode.

## Age at the End of the University Course (AGE_END)

The dataset records a second variable concerning the Age of student, namely, Age at the completion of the course (AGE_END). This is a latent variable that is formed out of a single manifest variate, namely Time End. The values of the variable are also the results of forming Rank-scaled scores. In the model, the student Age variate (Time End) is shown as the reflective indicator of the LV AGE_END in the unity mode.

## Prior Achievement (PRIOR)

Prior achievement involves student achievement before entering the University. This variable is considered to be important in the model since it is part of the requirements to enter the University. In the path model, prior achievement (PRIOR) is reflected by three manifest variates, namely, Physics (Physics), Mathematics (Math), and English (English). Therefore, the LV PRIOR is drawn in the path diagram in the outward mode with three MVs. Table 12.4 shows that there is little difference in the values of the loadings, communalities, redundancies and tolerances between two MVs, namely Math and English. These manifest variates contribute strongly to reflect the PRIOR construct, with the factor loadings for Math and English 0.84 and 0.85 for the Grade score sample and with 0.87 and 0.87 for the IRT score sample. Although the value of factor loading for Physics (Grade score sample, $l=0.54$, IRT score sample, $l=0.41$ ) is lower than the values of Math and English, Physics can also be considered to contribute effectively to reflecting the LV PRIOR construct as indicated by the factor loading being above 0.3 . For the communality index, again Physics has the lowest value when compared with the values for Math and English.

Table 12.4 Outer Model Results for Student Level Factors Influencing English Proficiency

| Dependent Variable |  | Grade Score Sample ( $\mathrm{n}=3995$ ) |  |  |  | IRT Score Sample ( $\mathrm{n}=1978$ ) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Independent | Weight | Loading | Communality | Redundancy | Tolerance | Weight | Loading | Communality | Redundancy | Tolerance |
| GENDER | Unity | Exogen | 1 MVs |  |  | Unity | Exogen | 1 MVs |  |  |
| Sex | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| AGE_BEGIN | Unity | Exogen | 1 MVs |  |  | Unity | Exogen | 1 MVs |  |  |
| Time_Begin | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| AGE_END | Unity | Exogen | 1 MVs |  |  | Unity | Exogen | 1 MVs |  |  |
| Time_End | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| SES | Outward | Exogen | 3 MVs |  |  | Outward | Exogen | 3 MVs |  |  |
| Focc | -0.15 | -0.13 | 0.02 | 0 | 0.11 | -0.27 | -0.28 | 0.08 | 0 | 0.11 |
| Moce | -0.11 | -0.09 | 0.01 | 0 | 0.11 | -0.21 | -0.23 | 0.05 | 0 | 0.11 |
| Psal | 0.99 | 0.98 | 0.95 | 0 | 0.01 | 0.95 | 0.92 | 0.85 | 0 | 0.01 |
| PRIOR | Outward | Endogen | 3 MVs |  |  | Outward | Endogen | 3 MVs |  |  |
| Physics | 0.28 | 0.54 | 0.29 | 0.01 | 0.1 | 0.17 | 0.41 | 0.17 | 0.01 | 0.09 |
| Math | 0.47 | 0.84 | 0.7 | 0.01 | 0.31 | 0.52 | 0.87 | 0.76 | 0.03 | 0.35 |
| English | 0.54 | 0.85 | 0.72 | 0.01 | 0.27 | 0.56 | 0.87 | 0.75 | 0.03 | 0.31 |
| FACULTY | Unity | Endogen | 1 MVs |  |  | Unity | Endogen | 1 MVs |  |  |
| Faculty | 1.00 | 1.00 | 1.00 | 0.02 | 0.00 | 1.00 | 1.00 | 1.00 | 0.03 | 0.00 |
| SELECT | Unity | Endogen | 1 MVs |  |  | Unity | Endogen | 1 MVs |  |  |
| Selection | 1.00 | 1.00 | 1.00 | 0.21 | 0.00 | 1.00 | 1.00 | 1.00 | 0.27 | 0.00 |
| ENGLISH_1 | Unity | Endogen | 1 MVs |  |  | Unity | Endogen | 1 MVs |  |  |
| Score Eng_1 | 1.00 | 1.00 | 1.00 | 0.15 | 0.00 | 1.00 | 1.00 | 1.00 | 0.16 | 0.00 |
| YEAR | Unity | Exogen | 1 MVs |  |  | Unity | Exogen | 1 MVs |  |  |
| Year | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| BAHASA | Unity | Endogen | 1 MVs |  |  | Unity | Endogen | 1 MVs |  |  |
| Score_Bah | 1.00 | 1.00 | 1.00 | 0.09 | 0.00 | 1.00 | 1.00 | 1.00 | 0.07 | 0.00 |
| SEMESTER | Unity | Exogen | 1 MVs |  |  | Unity | Exogen | 1 MVs |  |  |
| Semes | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| ENGLISH_2 | Unity | Endogen | 1 MVs |  |  | Unity | Endogen | 1 MVs |  |  |
| Eng_Proficiency | 1.00 | 1.00 | 1.00 | 0.15 | 0.00 | 1.00 | 1.00 | 1.00 | 0.14 | 0.00 |
| GPA | Unity | Endogen | 1 MVs |  |  | Unity | Endogen | 1 MVs |  |  |
| Score_GPA | 1.00 | 1.00 | 1.00 | 0.30 | 0.00 | 1.00 | 1.00 | 1.00 | 0.32 | 0.00 |

In the variable column, the bold type is for the LVs (latent variables), while the plain type is for the MVs (manifest variates)

## Socio-Economic Status (SES)

Socio-Economic Status (SES) indicates home background of student. In the model, Socio-Economic Status (SES) is reflected by three manifest variates, namely, Father Occupation (Focc), Mother Occupation (Mocc), and Parent Salary (Psal). Therefore, the LV SES is drawn in the path diagram in the outward mode with three MVs. The value of each of the manifest variates is recoded as the result of criterion scaling since these variates are treated as categorical variables (see Chapter 8 and Appendix 8A). These variates recorded for SES in the dataset are formed as the result of comparing mean scores (numbers in bracket indicate mean scores) between groups and criterion scaling, discussed in Chapter 8. In Table 12.3 for Father Occupation (Focc), the results of criterion scaling indicates that students whose fathers are Clerical (2.80) and Self-employed (2.80) as well as Teacher (2.74) have higher performance than students whose fathers are Labourer (2.61), Farmer (2.50), and Managerial, Professional (2.43). Mother Occupation (Мосc) has similar results.

The outer model results in Table 12.4 show that there are large differences in the values of the loadings and communalities among the MVs, namely, Focc, Mocc, and Psal. The manifest variate Psal contributes strongly to reflecting the formation of the SES construct for both the 3995 and 1978 samples with the factor loadings and communalities for Psal being 0.98 and 0.92 and 0.95 and 0.85 respectively. For Parents Salary (Psal), the results indicate that the larger parents' salary, the larger the Socio-economic Status variable and Father's and Mother's Occupation contribute slightly and negatively. Thus there is little difference in the values of factor loadings for Focc and Mocc. Consequently, out of the three MVs that form SES constructs, Psal can be considered to reflect strongly the SES construct in its formation by the outward mode. Father Occupation (Focc) and Mother Occupation (Mocc) only contribute slightly and negatively (when compared with Parent Salary) to the latent variable SES. These results are a consequence of Father Occupation and Mother Occupation not being coded as either Rank-scaled scores or Criterion-scaled scores but in a way that is consistent with the International Grouping and the general International scaling of these variables. Thus the negative signs for Focc and Mocc indicate that students whose parents are Clerical, Self-employed, and Teacher have higher scores than students whose parents are Labourer, Farmer, and Managerial. Moreover, the positive signs that are indicated with the factor loadings for Parent Salary (Psal) and the small negative loadings for Father and Mother Occupation are a
result of the criterion scaling of Parent Salary recorded in Table 12.3 and Chapter 8 in which students from higher Salary level homes have lower performance than students from lower Salary levels backgrounds. This results from the students whose parents are richer having lower average GPA performance than students from poorer home backgrounds.

## Faculty of Instruction (FACULTY)

Faculty describes the faculties in the University under survey. The variable recorded for FACULTY in the dataset is formed as the result of comparing mean scores between groups and criterion scaling. Faculty of Informatics Engineering has the highest scale value, while Faculty of Science and Mathematics has a low scale value as does Marine Engineering. In the model, the faculty variable is shown as the reflective indicator of the LV FACULTY in the unity mode.

## Method of Student Selection (SELECT)

Method of Student Selection (SELECT) describes how the University selects its students. The value of the SELECT variable is obtained from the results of criterion scaling. The results of criterion scaling show that students under Other (scholarship, and achievement) procedure have the highest scale value, while students who enter the University under an Invitation procedure have a lower scale value as do National Selection and Industrial Partnership. Method of Student Selection (SELECT) is a latent variable that is reflected in the unity mode.

## English 1t (English_1)

English 1t (English_1) is the English 1 score. These scores are assessed during English Course 1, as is explained in Chapters 13 and 14. In the dataset, the English 1 score is scaled with values from 1 to 4 . English 1 (English_1) as a latent construct is reflected by the student's score on the English 1 score. Since Eng_1 is the only MV to reflect English_1, this construct is formed in the path model in the unity mode. Consequently, the factor loading as well as the communality index for the English_1 is 1.00 (unity), while the tolerance is 0.00 .

## Year (YEAR)

YEAR is a latent variable that indicates year in which students enrolled in the subject Bahasa Indonesia. The value of the variable YEAR is obtained by forming a

Rank-scaled score. YEAR is a latent variable that is reflected by only one MV. In the path model, YEAR is reflected in the unity mode.

## Score of Bahasa Indonesia(BAHASA)

The LV BAHASA indicates the Bahasa Indonesia score as is explained in Chapters 13 and 14. These scores are obtained from the students at any time during their study. In the dataset, the score of Bahasa Indonesia is scaled from 1 to 4 . BAHASA is a latent variable that is reflected in the unity mode in the path model.

## Semester (SEMESTER)

Semester (SEMESTER) is a latent variable that indicates the semester of the student's course in which the students enrolled in the English 2c Course. The value of semester is obtained from the result of Rank-scaled scoring as is explained in Chapter 8 and recorded in Table 12.3. This variable is reflected in the unity mode in the path model.

## English Proficiency (ENGLISH_2)

English proficiency (ENGLISH_2) describes the English 2 score that is obtained during English 2t Course. The score for ENGLISH_2 is scaled with values from 1 to 4. As a latent variable, ENGLISH_2 is reflected by only one MV. Therefore, in the path model ENGLISH_2 is reflected in the unity mode.

## Student Learning Outcome (GPA)

Student learning outcome (GPA) indicates the students' GPA score. The scores on GPA are scaled with values ranging from 1 to 4 . The variable GPA is reflected in the unity mode in the path diagram since this variable is reflected by only one MV. The procedures involved in the examination of the outer model results can be considered as a procedure to strip the latent variables of those manifest variates that do not contribute significantly to reflect or form a latent construct. For this reason, the examination of the outer model results can be considered as a necessary step before the examination of the inner model results can be undertaken. The discussion of the inner model results is presented in the next section.

## Inner Model Results for the Student-level Factors Influencing English Language Proficiency

The inner model specifies the relationships between the LVs (Sellin, 1989). The strength of relationships between the LVs is measured in the PLSPATH program with several indices from the inner model results. The first index is the beta coefficient which indicates the path coefficient associated with the direct effect of one LV (independent LV) on another LV which it influences (dependent LV). The second index is the correlation which is the product-moment correlation between a given independent LV and the dependent LV (Sellin, 1989). The next index is the tolerance that is assessed by the squared multiple correlation between an independent LV and the set of remaining independent LVs involved in a given inner model equation. The use of the tolerance in these inner model results is the same as in the outer model results, that is, as an index to assess the relative amount of multicollinearity. The last index is the R-square value, which is an index to examine the predictive strength of the inner model relationships. This index gives the proportion of variance explained for each endogenous variable in the model under examination. The estimated values of the tolerance are not discussed in the text that follows.

In order to examine the relationships among the LVs in the inner model, the PLSPATH computer program also provides information about the path coefficients' direct effects, indirect effects, and total effects as well as the correlation, and the Rsquare index. The inner model results for student level factors influencing English Language Proficiency are presented in Table 12.5. Only the standardized path coefficient ( $\beta$ ) and the correlation coefficient (r) as well as their standard errors (se) are recorded in Table 12.5 reported and discussed.

## Significance of Effects

The PLSPATH computer program provides a distribution-free jackknife procedure for the testing of the estimated statistical relationships, particularly with respect to the path coefficients and factor loadings in the inner and outer models. A jackknife procedure involves the estimation of the scores for repeated samples in which one unit of sampling at a time is dropped from the samples. The idea of using the jackknife standard errors (s.e) in the inner model results in the PLSPATH program is
because no theoretical formula is available for calculating the standard errors of the estimated statistics for the complex samples involved in the study. Consequently, the available data forms a new sub-population with n primary sampling units and the sampling error (se) can be calculated for ( $\mathrm{n}-1$ ) cases by dropping one unit at a time.

This is possible to examine the statistical significance of each explanatory variable if a coefficient is more than twice its standard error (s.e). A jackknife standard error of 0.03 provides a confidence interval for an estimated coefficient of 0.06 for a moderately large sample that is in keeping with Fisherian statistics and the five per cent level of significance, where an approximately normal distribution is involved. Consequently, in the inner model, consideration is given to the use of the jackknife standard errors in order to assess the statistical significance of the path coefficients by using the value of 0.06 or 0.07 for the critical value of the significance of the path of coefficients. For the purposes of these analyses, the path coefficient of 0.06 or 0.07 is considered as the critical value to indicate a significant effect of one LV on another LV which it influences (Sellin, 1989). This critical value is also chosen to be greater than twice the largest estimated jackknife standard error in the path analyses, in order to make some allowance for the clustering of students in faculties or classes which are not available for the estimation of the appropriate standard errors and statistical significance of path coefficients and loadings (Sellin and Keeves, 1997).

It is worth noting that the results of inner model analysis record beta coefficients ( $\beta$ ), correlation coefficients (r), deltas, and tolerances. However, since there are no results of importance in these analyses with respect to either delta or tolerance, Table 12.5 merely records beta coefficients, correlation coefficients and standard errors (s.e) from the jackknife results and employs the critical value of 0.06 or 0.07 for the beta and correlation coefficients that are standardized coefficients.

Table 12.5 Inner Model Results for Student Level Factors Influencing English Language Proficiency

s.e: standard errors

## Examination of Results

Although this study examines factors that have an influence on English Language Proficiency, the inner model results also present relationships between latent variables in addition to those factors that directly influence English Language Proficiency. The path coefficient for the inner model results are calculated only for the endogenous latent variables, namely latent variables which have arrows pointing to the latent variables concerned as are drawn in the path model in Figure 12.1. This model hypothesized that there are 13 LVs in the model, five of them are endogenous (PRIOR, FACULTY, SELECT, BAHASA, and ENGLISH_1), while six others
are antecedents or exogenous LVs (GENDER, AGE_BEGIN, AGE_END, SES, YEAR, and SEMESTER) and the LVs ENGLISH_2 and GPA are the outcome variables. For this reason, the results of the analyses in the section that follows are presented for the five endogenous LVs only. The revised path diagram for the student level factors influencing English Language Proficiency (ENGLISH_2) is presented in Figure 12.3. Figure 12.3 records side by side the significant estimated path coefficients for the Grade score sample in curved brackets, the IRT score sample in square brackets and where the estimated coefficients have effects only in one sample the value of the coefficients is recorded with one set of brackets, namely, curved or square brackets as is consistent with the presentation of both sets.

## Endogenous Variables

## Prior Achievement (PRIOR)

In the proposed model presented in Figure 12.1, prior achievement (PRIOR) is hypothesized to be influenced by three other latent variables, namely GENDER, AGE_BEGIN, and SES. The results of the analysis indicate that the variable AGE_BEGIN has effects ${ }^{12}$ in both samples with $\beta=-0.14$ (0.02) in the Grade score sample and $\beta=-0.11(0.03)$ in the IRT score sample, with a greater effect in the Grade score sample. The negative sign indicates that younger students are more likely to have higher levels of prior performance than the older students.

The variable GENDER has only a significant positive effect for the IRT score sample with $\beta=0.13$ ( 0.03 ) indicating that girls are more likely to have in general, higher scores on the prior performance variable of the Mathematics, Physics, and English scores. It is interesting to note that for the variable SES significant effects are recorded only for the IRT score sample but the effect is small with $\beta=-0.09$ (0.03) with the negative sign indicating that the students from low socio economic status homes are more likely to have higher prior achievement in the IRT score sample. Prior achievement is the students' level of achievement obtained before they enter the University, and it is not surprising that this variable is related to the mode of student selection for both samples with $\beta=0.23$ (0.02) and $\beta=0.26$ ( 0.03 ) for the Grade score sample and IRT score sample respectively. Moreover, the variable of student selection, following criterion scaling shows that students who enter the

[^9]University under Scholarship and Achievement, combined with Other procedures in Table 12.3, have the highest mean scores for the GPA (3.25) and English Language Proficiency (2.91). Thus, students who enter to the University under the Scholarship and Achievement (Other) procedures tend to be from a lower socio-economic background. Therefore, this argument explains why the relationship between SES and PRIOR is negative, and implies that students from lower socio-economic backgrounds enter the University under scholarship procedures and have better prior achievement.


Figure 12.3 Student Level Model on Factors Influencing English Language Proficiency and Student Learning Outcome (GPA)
( ): Grade Score Sample (N= 3995); [ ]: IRT Score Sample (N= 1978).

## Faculty of Instruction (FACULTY)

There are five faculties involved in the study, namely, Marine Engineering, Mathematics and Natural Sciences, Civil and Planning Engineering, Industrial Engineering, and Informatics System Engineering. The LV FACULTY is categorical in nature. From Chapter 8 and Table 12.3 following criterion scaling, the Faculty of System Informatics Engineering is found to have the highest level mean score, followed by Industrial Engineering, Civil and Planning Engineering, Mathematics and Natural Sciences, and Marine Engineering has the lowest mean score.

In the path model, Faculty of instruction (FACULTY) is hypothesized to be influenced by four LVs, namely GENDER, AGE, SES, and PRIOR. The results of the analysis indicate that Socio-economic Status has a significant effect on the choice of Faculty with a path coefficient of $0.14(0.005)$ for the Grade score sample and 0.15 ( 0.01 ) for the IRT score sample. This indicates that the Socio-economic Status of parents has an effect on how students choose the faculty in which they enrol. It is found that Parent Salary (Psal) is the strongest variate for the Socio-economic Status (SES) variable. This is because Parent Salary (Psal) has the largest factor loading in reflecting SES. This indicates that students whose parents are richer are more likely to choose a course like Informatics System Engineering and Industrial Engineering, while students from low income homes are more likely to choose Marine Engineering. In addition, for the IRT score sample GENDER has a significant effect with a negative path coefficient $(\beta)$ of $-0.08(0.03)$ indicating that boys are also more likely to select courses like Informatics System Engineering and Industrial Engineering.

## Method of Student Selection (SELECT)

The University under survey has several different methods of student selection, including national selection and local selection. The local selection method has four different modes of selection, namely Invitation, Scholarship, Achievement, and Partnership. Students who enter the University by choosing 'partnership' as their method for entering the university are required to pay more than required by other methods of selection. Partnership means that the University collaborates with some industrial sectors and allows the students to enter the University by taking a local university test, but the student is required to pay more in fees.

In the proposed model presented in Figure 6.1, mode of selection (SELECT) is hypothesized to be influenced by five LVs, namely GENDER, AGE, SES, PRIOR and FACULTY. The results of analysis indicate that out of these five LVs, four LVs, namely GENDER, SES, PRIOR and FACULTY have significant effects on the criterion scaled variable SELECT. However, GENDER has an effect only on SELECT for the IRT score sample with $\beta=0.07$ ( 0.02 ). The positive sign indicates that method of selection is influenced more by being a female student than by being a male student in the IRT score sample. However, Socio-economic status (SES) has similar effects for both samples with path coefficients of $\beta=-0.29$ (0.00) and $\beta=$ -0.32 (0.02) for the Grade and IRT score samples respectively. This indicates that the Socio-economic Status of the parents has an effect on the ways in which students choose the method of selection offered by the University with lower income families relying on scholarships and achievement.

The LV PRIOR also has a significant effect on SELECT with similar path coefficient for both samples of $\beta=0.23(0.02)$ and $\beta=0.26$ ( 0.03 ) for the Grade and IRT score samples respectively. This indicates that the level of prior achievement obtained by students influences the selection method by means of which students are able to attend the University. The positive sign indicates that students who have a higher level of Prior Achievement are more likely to attend the University with a scholarship and less likely through an industrial partnership.

FACULTY is the fourth LV that has a significant effect on SELECT with $\beta=-0.22$ $(0.00)$ for the Grade score sample and $\beta=-0.24(0.02)$ for the IRT score sample. The negative sign indicates that students who choose the Faculty of System Informatics Engineering are more likely to be students who enter the University with a scholarship and a higher level of Academic Achievement. This also implies that students who attend the University under Industrial Partnership selection are less likely to be chosen by the Faculty of Informatics Engineering. The criterion scaling procedure indicates that students who attend the University under Industrial Partnership have the lowest mean score compared to students who attend the University by other modes of student selection. Moreover, students who choose the Faculty of Informatics Engineering are more likely to have higher achievement as is indicated by the highest mean score in their academic performance. The results in Table 12.5 also indicate that the variance explained of SELECT for the Grade score sample 21 per cent and for the IRT score sample is 27 per cent, which indicates that
the residual paths shown in Figure 12.2 for SELECT are 0.89 and 0.85 respectively. It can be concluded from these results that for SELECT, Socio-economic Status has the strongest total effect on method of student selection ( $\beta=-0.29$ for Grade score sample) and ( $\beta=-0.32$ for the IRT score sample).

The results of inner model indirect effects are also recorded in Table 12.6. Indirect effects are only discussed for those LVs that have an effect of $\mathrm{i}=0.06$ or larger. Table 12.6 indicate that the LV SES has marginal indirect effect on SELECT with an indirect path coefficient of -0.06 . This effect only applies for the Rasch score sample. For the Grade score sample, the LVs AGE and SES also have indirect effects on SELECT, but the effects are very small, and fall well below 0.06 . Socio-economic Status (SES) has the small indirect effect on method of student selection (SELECT) because of its effects on student Prior Achievement (PRIOR) of -0.09 and FACULTY of 0.15 which in turn have effects on method of student selection (SELECT).

## Score of English 1t (ENGLISH_1)

Students were enrolled in English 1 at the beginning of the University course. In this study, the LV ENGLISH_1 that indicates the Language Achievement score of English 1 obtained at the beginning or during of Course 1. Table 12.5 records that three latent variables (LVs) namely student Prior Achievement (PRIOR), Faculty of Instruction (FACULTY), and mode of Student Selection (SELECT) have effects on the score of English 1 and explain 15 per cent and 16 per cent of the variance for the Grade score sample and IRT score sample respectively. Student Prior Achievement (PRIOR) has similar effects on both Grade score and IRT score samples with $\beta=$ 0.30 ( 0.03 ) and $\beta=0.33(0.02)$ respectively. These indicate that students who have a higher level of Prior Achievement are more likely to do better in English 1. The second LV which has significant effects on ENGLISH_1 is FACULTY with $\beta=$ 0.19 ( 0.02 ) for Grade score sample and $\beta=0.16(0.02)$ for IRT score sample. The results of scaling recorded in Table 12.3 indicate that students who are from Informatics System Engineering are likely to be the better performers than students from other faculties. In addition, the effects of method of selection (SELECT) are 0.14 (0.02) and 0.12 ( 0.03 ) for the two samples of Grade and IRT score samples respectively on ENGLISH_1 indicate that students who enter the University under the scholarship procedure are more likely to perform better in English 1t than students under other methods of student selection. There are several small indirect
effects that are recorded in Table 12.6 operating to influence ENGLISH_1 performance but they all fall below the level of $\mathrm{i}=0.06$ for any discussion or consideration of their influence.

Table 12.6 Inner Model Effects for Student Level Factors Influencing English 2


[^10]
## Score of Bahasa Indonesia (BAHASA)

The LV BAHASA involves the scores on Bahasa Indonesia. The discussion of criterion scaling presented in Chapter 8 indicates that students are allowed to enrol in Bahasa Indonesia at any time before they graduate from the University. In the path model, there are five LVs (latent variables), namely, GENDER, FACULTY, SELECT, ENGLISH_1, and YEAR, that have effects on BAHASA scores. However, the LV SELECT only has a small effect on BAHASA for the Rasch score sample with a beta coefficient of $\beta=0.07$ ( 0.03 ). Table 12.3 shows that students who attend the University under Scholarship Selection are likely to be better prior achievers than students under other methods of selection. The second LV which has effects on BAHASA is GENDER with $\beta=0.14$ (0.02) for the Grade score sample and $\beta=0.10(0.02)$ for the IRT score sample. This indicates that female students have higher levels of Bahasa Indonesia scores than their male counterparts. Moreover, FACULTY has effects on the LV BAHASA with a beta coefficient of $\beta=0.12$ ( 0.02 ) and $\beta=0.12$ ( 0.03 ) for the Grade score and the IRT score samples respectively. Table 12.3 records that for the Faculty of Instruction, students who are from the Faculty of Informatics System Engineering are more likely to have the highest level on the Bahasa score tests. The variable ENGLISH_1 has similar total effects on BAHASA for both samples with $\beta=0.15$ (0.01) for the Grade score sample and $\beta=$ 0.14 (0.02) for the IRT score sample. This indicates that students who are good performers in ENGLISH_1 are more likely to do better in the BAHASA test. In addition, Table 12.5 also records that students who undertake BAHASA in the later years are more likely to have higher performance than students who undertake BAHASA in the earlier years with path coefficients of $\beta=0.17$ (0.00) and 0.16 (0.03) for the Grade score and the IRT score samples respectively.

It is interesting to note that student Prior Achievement (PRIOR) has an indirect effect on BAHASA ( $\beta=0.07$ ) in part because of its effect on SELECT ( $\beta=0.23$ ) which in turn has an effect on BAHASA ( $\beta=0.07$ ). However, only small proportions of the Bahasa scores are explained by the two samples of 9 per cent and 7 per cent for the Grade score and the IRT score samples with residual paths of 0.95 and 0.96 respectively.

## Criterion Variables

## Factors that Influence English Language Proficiency (ENGLISH_2)

It can be seen from Table 12.5 that six latent variables, namely sex of student (GENDER), Socio-economic status (SES), student Prior Achievement (PRIOR), Faculty of Instruction (FACULTY), Score on English 1t (ENGLISH_1), and semester in which students undertook English 2 (SEMESTER) account for English proficiency (ENGLISH_2) and explain 15 per cent of the Grade score sample variance ( $\mathrm{n}=3995$ ) and 14 per cent of the variance of the IRT score sample ( $\mathrm{n}=1978$ ) in the English 2 score. The strongest effect is recorded for student performance before entering university (PRIOR) with path coefficient of $\beta=0.21$ ( 0.02 ) for Grade score sample and $\beta=0.18(0.03)$ for IRT score sample. This indicates that the better the student performs before entering the university, the more likely it is that they perform better on the English $2 t$ test. Conversely, those who have low achievement before entering the university tend to have lower performance on English 2t. A second LV which has an influence on English 2t is SEMESTER with beta coefficients of 0.07 (0.02) and 0.12 ( 0.03 ) for the Grade score and IRT score samples respectively. This relationship reveals that the earlier students enrol in English 2c, the better the students perform on English 2. FACULTY also has a significant path in explaining English proficiency (ENGLISH_2) with path coefficients of 0.13 (0.02) and 0.14 ( 0.03 ) for the Grade score sample and the IRT score sample respectively indicating that students who study in the Faculty of Informatics System Engineering are likely to perform better in English $2 t$ test than students who study in the other Faculties. Moreover, students who have higher scores in English 1 (ENGLISH_1) are more likely to perform better in English 2t with path coefficients of 0.16 ( 0.01 ) and 0.17 ( 0.03 ) for the Grade score sample and the IRT score sample respectively. This is in contrast to those students who do not have high language performance in English 1t. SES is the last LV that is also found to be a relatively strong explanatory variable on English $2 t$ with path coefficients of 0.18 (0.03) and 0.13 (0.02) for the Grade score and the IRT score samples respectively. This indicates that students from higher financial status homes are more likely to achieve higher test scores on English 2t than students from lower status homes.

In addition to the direct effect presented in Table 12.5, Table 12.6 presents indirect and total effects on English Language Proficiency. The estimated indirect effects indicate the strength of the indirect relationship of a variable, namely, PRIOR (0.06) on English 2 t scores (ENGLISH_2) for the IRT score sample. However, this effect results from the relationships of PRIOR on ENGLISH_1 ( $\beta=0.30$ and $\beta=0.33$ for the Grade score and the IRT score samples respectively) which in turn have strong direct effects ( 0.16 and 0.19 respectively) on English 2t. Thus, PRIOR is found to have a significant indirect effect on ENGLISH_2 through ENGLISH_1 for the IRT score sample and a marginal indirect effect of 0.05 for the Grade score sample.

Prior Achievement (PRIOR) is the strongest explanatory variable of English Language Proficiency (ENGLISH_2), while the LV FACULTY and English 1t have smaller influences on English Language Proficiency (ENGLISH_2). However, only 15 per cent and 14 per cent of the variance in the scores for the Grade score and the IRT score samples are explained respectively of ENGLISH_2 performance in this study with large residual paths of 0.93 and 0.92 respectively.

## Student-Level Factors that Influence Student Learning Outcome (GPA)

A number of factors are found to have an influence on GPA. Out of the nine factors that are hypothesized from the model developed in Figure 12.2 to have an influence on the student learning outcome (GPA), seven variables are significant in the final model. The LVs Socio-economic Status (SES) and English 2t score (ENGLISH_2) are not included in the final model. It is surprising that English Language Proficiency (ENGLISH_2) is not included since it is expected to have an effect on GPA in the final model. This may be because the score on English 2t (ENGLISH_2) is not included in GPA. These seven factors, namely Sex of student (GENDER), Age at the End of the course, Prior Achievement (PRIOR), faculty in which students are studying (FACULTY), Mode of Student Selection (SELECT), English_1 score (ENGLISH_1) and score of Bahasa Indonesia (BAHASA) are the seven latent variables (LVs) that influence GPA.

These seven variables explain 30 per cent and 32 per cent of the variance in the GPA value score in the Grade score sample and IRT score sample respectively. The strongest effect is shown by Prior Achievement (PRIOR) with the path coefficient of 0.23 ( 0.03 ) for the Grade score sample and $\beta=0.28$ ( 0.02 ) for the IRT score sample. This means that students who have higher achievement before entering the university
are more likely to achieve at a higher level of GPA scores, while students who show lower performance before entering the university tend to achieve at a lower level of GPA scores. However, only the LV GENDER has a direct effect on GPA in the Grade score sample with $\beta=0.11$ ( 0.02 ). This indicates that female students are more likely in this sample to have a higher level of GPA score than their counterparts. The next LV that has a strong effect on GPA is ENGLISH_1. The variable ENGLISH_1 has similar effects for both samples with $\beta=0.19$ (0.03) for the Grade score sample and $\beta=0.18$ ( 0.02 ) for the IRT score sample. This means that students who are good performers in ENGLISH_1 are more likely to achieve a higher level of GPA score, while students who have lower level of ENGLISH_1 score are more likely to have a lower level of GPA score.

Moreover, students who perform better in BAHASA are likely to have a higher level of GPA score with $\beta=0.20$ and $\beta=0.18$ for the Grade and IRT score samples respectively. FACULTY is another variable that has a contribution to GPA score with beta coefficient of $0.18(0.00)$ for the Grade score sample and $\beta=0.17(0.02)$ for the IRT score sample. The contribution of the LV FACULTY to GPA indicates that students who are from the Faculty of Informatics System Engineering are more likely to have a higher level of GPA score than students from other faculties. Furthermore, mode of student selection (SELECT) is another variable that influences GPA with a direct path coefficient of $0.11(0.02)$ in the Grade score sample and $\beta=0.14$ (0.02) in the IRT score sample. This relationship reveals that students who enrol in the University under Scholarship Selection are more likely to have a higher GPA score. Finally, the results of the inner model indicate that younger students are to complete their course (AGE_END) the more likely they are to have a higher GPA score than the older students as is indicated by the negative sign of the path coefficients $\beta=-0.07$ (0.02) and $\beta=-0.09$ ( 0.02 ) for the Grade score and the IRT score samples respectively.

As has been considered in particular cases recorded and discussed in previous paragraphs, the PLSPATH computer program is also able to produce the indirect effects and the results are presented in Table 12.6. However, it is important to note that only the path coefficient's indirect effects that are equal to or greater than 0.06 are of sufficient magnitude to be considered significant and of practical interest. This
value of 0.06 is employed because it is equal to or more than twice the standard error involved for each coefficient, that are calculated by jackknife estimation procedures. In addition to having direct effects on GPA, the results of the inner model effects indicate that there are three LVs namely GENDER, SES and PRIOR that have significant indirect effects on GPA scores with values equal to or in excess of 0.06 on GPA that are mediated through other variables. These indirect effects are mainly operating in the IRT score sample. For example Prior Achievement (PRIOR) has an indirect effect (0.12) on GPA for the IRT score sample. However, this effect is largely contributed by the relationship of PRIOR (0.33) on ENGLISH_1 which in turn had a strong direct effect (0.18) on GPA. In addition, PRIOR has an indirect effect on GPA for the Grade score sample of 0.10 that together with the direct effect of 0.23 gives rise to a total effect of 0.33 . Moreover, it is very interesting to note that SES that was previously expected to have a direct effect on GPA appears as having a significant indirect effect ( -0.06 ) on GPA for the IRT score sample through the method of Student Selection (SELECT). The negative sign shows that students from lower financial status homes are more likely to achieve a higher level of GPA score than students from higher financial status homes. Furthermore, GENDER has an indirect effect of 0.07 on GPA for the IRT score sample through BAHASA which in turn has a significant direct effect on GPA.

It is important to recognize that the explanatory variables examined in this study explain 30 per cent of the variance of GPA in the Grade score sample and 32 per cent of the variance of GPA in the IRT score sample. These results indicate that the multiple correlation estimates between the explanatory variables on the outcome of Grade Point Average lie between 0.5 and 0.6 which are strongly estimated effects.

## Replication Student-Level Factors Influencing English Language Proficiency (ENGLISH_2) Using IRT Score Sample

Referring to Figure 12.1 about data design, replication involves the Grade score sample with 3995 cases that are reduced to 1978 cases to form the IRT score sample. The reduced number is caused by the number of cases in the IRT score sample having only 1978 cases with IRT-scaled scores.

Moreover, it is important to note that the University under survey records the score of English language proficiency (ENGLISH_2) in two different ways. The first
procedure involves a scale from 1 to 4 . Therefore, the raw data record the minimum scores as 1 and the maximum scores as 4 . The results of student-level analyses for factors influencing English language proficiency (ENGLISH_2) for the sample with scales of 1 to 4 are reported in the previous section. A second way of recording IRTscaled scores involves the use of scales with a mean of 50 and a standard deviation of 10 that have been calibrated on English speaking samples.

The variable English language proficiency (ENGLISH_2) with the scale 1 to 4 and English Language Proficiency (ENGLISH_2) with IRT-scaled scores are basically the same variable. What make them conceptually different is that the variable ENGLISH_2 discussed in the previous section is indicated by one manifest variate (Eng_2) and in the model it is reflected in the unity mode, while the variable English Language Proficiency (ENGLISH_2) with IRT-scaled scores is reflected by three manifest variates, namely Listening Comprehension (Listen), Structure and Written Expression (Write), and Reading Comprehension (Read) and in the model it is reflected in the outward mode. The differences between these variables are only in the way they are scaled, since both data sets have the same sample sizes.

Since they basically involve the same constructs and in order to avoid some confusion, a decision is made to continue using the name of the variable ENGLISH_2 instead of creating another name in this section. In the model, the LV ENGLISH_2 is reflected by three manifest variates, namely, Listen, Write, and Read in the analyses for the IRT score sample.

Therefore the primary research question addressed by this model (see Figure 12.4) is: "What factors influence English Language Proficiency (ENGLISH_2) (in the replication mode)?"

This section discusses the advantages and disadvantages of the two approaches with respect to examining factors that influence English language proficiency (ENGLISH_2) assessed in terms of IRT-scaled scores and the Rank-scaled scores. Thus, this section reports the comparison between the results of factors that influence English Language Proficiency which has 1 to 4 scale and factors that influence English Language Proficiency which has IRT-scaled scores. As discussed in the previous section, PLSPATH produces two sets of results for the analyses, (a) outer model and (b) inner model. This section first discusses the results of the outer model,
and is then followed by discussing the results of the inner model. However, the results of the outer model analysis only record the results of the outer model for the variable ENGLISH_2, while the rest of the results for the outer model analysis for the other variables are given in Table 12.1A in Appendix 12.1A. This is done because the results are mostly the same as the results presented in the previous section, except for the LV ENGLISH_2 with a IRT-scaled scores scale that has three manifest variates, namely Listen, Write, and Read. The results of outer model analyses are presented in Table 12.7.

## Outer Model Results for Factors Influencing English Language Proficiency (ENGLISH_2)

Table 12.7 compares the results of the outer model analyses between the sample with 1 to 4 scale, and the sample with IRT-scaled scores. The LV (latent variable) English language proficiency (ENGLISH_2) for the sample with the 1 to 4 scale only has one manifest variate, namely Eng_2 with the factor loading of 1.00, communality of 1.00, redundancy of 0.14, and tolerance of 0.00, while the LV, namely ENGLISH_2, for the sample with IRT-scaled scores contains three manifest variates, namely, Listen, Write, and Read. The estimates of the strength of the relationships between LV ENGLISH_2 and their corresponding MVs, namely Listening Comprehension, Structure and Written Expression, and Reading Comprehension, are presented in Table 12.7.

Table 12.7 Outer Model Results for Factors Influencing English Language Proficiency (ENGLISH_2)

| Dependent Variable |  | Rank-scaled Scores 1 to 4 ( $\mathrm{n}=1978$ ) |  |  |  | IRT Scale Scores ( $\mathrm{n}=1978$ ) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Independent | W | L | C | R | T | W | L | C | R | T |
| ENGLISH_2 | Unity | Endogen | 1 MVs |  |  | Outward | Endogen | 3 |  |  |
| Eng_2 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | - | - | - | - | - |
| Listen | - | - | - | - | - | 0.51 | 0.86 | 0.74 | 0.10 | 0.33 |
| Write | - | - | - | - | - | 0.31 | 0.77 | 0.60 | 0.08 | 0.35 |
| Read | - | - | - | - | - | 0.41 | 0.78 | 0.61 | 0.08 | 0.28 |

## English Language Proficiency (ENGLISH_2)

In the model, English Language Proficiency (ENGLISH_2) is reflected by three manifest variates, namely, Listening Comprehension (Listen), Structure and Written Expression (Write), and Reading Comprehension (Read). Therefore, the LV ENGLISH_2 is drawn in the path diagram in the outward mode with three MVs.

The outer model results presented in Table 12.7 show that there are small differences in the values of the loadings and communalities among the MVs, namely Listen, Write, and Read. A manifest variate Listen appears to contribute strongly to reflect the formation of the ENGLISH_2 construct for the sample of 1978 students with the factor loadings and communalities for Listen being 0.86 and 0.74 respectively. The values of the factor loadings for Write and Read are similar. Consequently, out of three MVs that form the ENGLISH_2 construct, Listen can be considered to reflect most strongly the ENGLISH_2 variable obtained by using the outward mode. Although Structure and Written Expression (Write) and Reading Comprehension (Read) have lower values of the factor loading and the communality than Listening Comprehension, all MVs are considered to contribute strongly to reflect the LV

## ENGLISH_2.

The results of the inner model analyses are presented in Table 12.8. As the subheading suggests, Table 12.8 simply summarizes the factors that are found to have an influence on English Language Proficiency (ENGLISH_2). This is done because the results of PLS analysis for the other LVs (latent variable) for factors influencing English language proficiency with only one MV have very similar values as the results of the analysis on factors influencing English language proficiency with three MVs. Therefore, a decision is made to present the remainder of the inner model results in Table 12.2A in Appendix 12.2A.

## Inner Model Results for Factors Influencing English Language Proficiency (ENGLISH_2).

The result of the inner model analysis for factors that influence English language proficiency for the sample with the 1 to 4 scale are recorded on the left-hand side of Table 12.8, while the inner model results obtained with IRT-scaled scores are recorded on the right-hand side of Table 12.8. The purpose involved in examining these two different sets of results of the analyses is to provide replication as to whether they are different or whether they are similar to each other, since one of variables, namely, ENGLISH_2 is obtained by using three manifest variates.

Table 12.8 records that they are six LVs, namely Sex of student (GENDER), SocioEconomic Status (SES), Student Prior Achievement (PRIOR), Faculty of Instruction (FACULTY), Score of English 1 (ENGLISH_1), and Semester in which students enrol in English 2c (SEMESTER) that influence English language proficiency
(ENGLISH_2) and explain 14 per cent of the variance of the group using 1 to 4 scale scores and 13 per cent of the variance of the group using IRT-scaled scores for the English 2t score.

Table 12.8 Inner Model Results for Factors Influencing ELPT

| Dependent Variable | Rank-scaled scores 1 to 4 <br> $(\mathrm{n}=1978)$ |  | IRT-scaled scores (n=1978) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Independent |  | Beta |  | Correlation | s.e | Beta |
| Correlation | s.e |  |  |  |  |  |
| ENGLISH_2 | 5 Pred-LVs R-square $=0.14$ |  | ENGLISH_2 | 6 Pred-LV R-square $=0.13$ |  |  |
| GENDER | - | - | - | -0.08 | -0.06 | 0.02 |
| SES | 0.15 | 0.15 | 0.02 | 0.13 | 0.13 | 0.02 |
| PRIOR | 0.20 | 0.17 | 0.03 | 0.18 | 0.18 | 0.03 |
| FACULTY | 0.14 | 0.22 | 0.03 | 0.14 | 0.21 | 0.02 |
| ENGLISH_1 | 0.17 | 0.21 | 0.03 | 0.19 | 0.24 | 0.03 |
| SEMESTER | 0.19 | 0.10 | 0.03 | 0.12 | 0.04 | 0.03 |

s.e: standard errors

However, GENDER only has an effect on ENGLISH_2 for the IRT-scaled scores group with $\beta=-0.08$ ( 0.02 ). The negative sign indicates that male students are more likely to have better performance in English 2 t than female students. Conversely, female students are more likely to perform less well in English $2 t$ than male students. This is an unexpected result, because in general female students perform at a higher level in languages than do male students, as occurs for the variable Bahasa Indonesia in the earlier sections of this chapter. The results of focus group discussions with students indicate that the students who enrol in English 2c are mostly at the final stage of their degree. Since the University majors in Science and Engineering, male students are more likely to choose engineering studies than female students. Students who choose engineering studies are more likely to interact with technology more frequently than students who do not. The students are also required to undertake a project such as writing a program or software for a computer. Automatically, they have to interact with computers that use English as the language of technology. Moreover, the programming language is coded in English. The more the students interact with technology, the higher the English scores that the students are likely to obtain.

Moreover, students are required to write a project. Consequently, they have to read widely. The students who major in Science and Engineering are required to read textbooks and international journal articles that are mostly written in English. Furthermore, they use their time downloading materials from the internet as well as
for reading the articles. They make efforts to understand what they are reading. They learn vocabulary and grammar and structure through reading. They read extensively. This is more likely to help them obtain higher scores in English.

Student prior achievement (PRIOR) is the strongest explanatory variable among the other LVs that have an influence on ENGLISH_2 for the group with 1 to 4 scale scores with $\beta=0.20$ ( 0.03 ), while the LV ENGLISH_1 is the strongest explanatory variable to have an influence on ENGLISH_2 for the IRT-scaled scores group with $\beta=0.19$ ( 0.03 ). This indicates that students with better prior achievement when entering the University are more likely to achieve a higher level of English language proficiency measured by the Rank-scaled scores, while students with better scores in English 1 t are more likely to have better scores in English 2t measured by the IRTscaled scores.

Socio-Economic Status (SES) is another LV that has a significant effect on English Language Proficiency (ENGLISH_2) for both groups, with $\beta=0.15$ ( 0.02 ) using the Rank-scaled scores on 1 to 4 scale and $\beta=0.13$ ( 0.02 ) using the IRT-scaled scores. This positive sign indicates that students who are from a higher level of socioeconomic status are more likely to be better performers in English 2t. This implies that the higher the level of parents' socio-economic status, the higher the level of students' proficiency in English. The results of criterion scaling show that the higher the parents' salary, the higher the students' scores in English. This implies that students who come from a lower economic status home background are less likely to obtain higher scores in English.

The next LV that has a significant effect on ENGLISH_2 is SEMESTER with $\beta=$ 0.19 ( 0.03 ) using the Rank-scaled scores and $\beta=0.12$ ( 0.03 ) using the IRT-scaled scores. Semester as a variable indicates the semester in which students enrol in English 2c. The positive signs of the relationships can be related to the results of comparing mean scores through criterion scaling. The results of criterion scaling indicate that students who enrol in English 2c in their earlier years or semesters perform better than their counterparts who enrol in English in their later years or semesters. Thus, these relationships indicate that the earlier students enrol in English 2c, the better the students perform in English 2t. This implies that students who enrol in English 2c in their later years of study achieve a lower score than students who undertake English 2c in their earlier years of study.


Figure 12.4 Replication Student-Level Factors Influencing English Language Proficiency (ENGLISH_2) ( ): English 2 score with Rank-scaled scores; [ ]: English 2 score with IRT-scaled scores. (N= 1978)

The LV FACULTY has the same path coefficients in both groups with $\beta=0.14$, and with similar standard errors of 0.03 and 0.02 for both Rank-scaled scores and IRTscaled scores respectively.

In addition to the direct effects presented in Table 12.8, Table 12.9 presents the direct, indirect and total effects on English language proficiency. While all the computer calculated indirect effects are presented in Table 12.8, it is important to note that this section merely discusses those analyses that have indirect effects with absolute values that are greater than or equal to 0.06, and are indicated in bold type.

The indirect effects describe the strength of the mediated relationship of one latent variable on another latent variable. However, the nature of this relationship is indirect, meaning that the relationship is mediated by another latent variable that has a direct relationship with the dependent variable. The indirect effects (i) on factors influencing English language proficiency are presented in Table 12.9, and graphically in Figure 12.4.
Table 12.9 Inner Model Effect (Direct, Indirect, and Total) for Student-Level Factor Influencing English Language Proficiency (ENGLISH_2)

| Dependent Variable <br> Independent | Rank-scaled scores ( $\mathrm{n}=1978$ ) |  |  | IRT-scaled scores ( $\mathrm{n}=1978$ ) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Direct | Indirect | Total | Direct | Indirect | Total |
| ENGLISH_2 R-square $=0.14$ |  |  |  | ENGLISH_2 R-square $=0.13$ |  |  |
| GENDER | - | 0.02 | 0.02 | -0.08 | 0.02 | -0.06 |
| AGE | - | -0.03 | -0.03 | - | -0.03 | -0.03 |
| SES | 0.15 | -0.01 | 0.14 | 0.13 | - | 0.13 |
| PRIOR | 0.20 | 0.06 | 0.26 | 0.18 | 0.07 | 0.25 |
| FACULTY | 0.14 | 0.02 | 0.16 | 0.14 | 0.02 | 0.17 |
| SELECT | 0.02 | 0.02 | 0.02 | - | 0.02 | 0.02 |
| ENGLISH_1 | 0.17 | - | 0.17 | 0.19 | - | 0.19 |
| SEMESTER | 0.19 | - | 0.19 | 0.12 | - | 0.12 |

It can be noted from Figure 12.4 that both English 2t scores, however measured, do not influence the GPA scores, since GPA scores are obtained across the four years of the course. English 2t language performance can only influence performance in the very last part of the course. Thus it is not surprising that it has no significant effect, but English 1t and student prior achievement (PRIOR) can be expected to influence GPA score.

In addition to having a direct effect on English language proficiency, the results of the inner model effects indicate that there is one LV, namely, student prior achievement (PRIOR) that has a significant indirect effect on English language
proficiency (ENGLISH_2) that is mediated through another variable ENGLISH_1. Student prior achievement (PRIOR) has an indirect effect on English language proficiency with path coefficients of 0.06 using the Rank-scaled scores 1 to 4 scale and of 0.07 using the Rasch-scaled scores. However, this effect is mediated by the relationship of PRIOR (0.33) acting on ENGLISH_1 which in turn has a strong direct effect on English language proficiency (ENGLISH_2) with $\beta=0.17$ using the 1 to 4 scale scores and $\beta=0.19$ using the IRT-scaled scores. Therefore, the relationship between student prior achievement (PRIOR) and English language proficiency (ENGLISH_2) is not only a direct relationship, but also the effect of PRIOR with an indirect effect operating through English 1 t to influence English 2 t .

## Summary

In summary, the results show that there are not large differences in the beta values between the results of inner model analyses for factors influencing English language proficiency (ENGLISH_2) measured with one manifest variate and English Language Proficiency (ENGLISH_2) measured with three manifest variates. The results indicate that the results are very similar. However, there are small differences in the number of factors that influence English language proficiency. The LV ENGLISH_2 with one manifest variate is influenced by five factors, namely, socioeconomic status (SES), student prior achievement (PRIOR), Faculty of Instruction (FACULTY), score of English 1t (ENGLISH_1), and semester in which students undertake English 2c (SEMESTER). However, the LV ENGLISH_2 with three manifest variates is influenced by six factors, namely gender of student (GENDER), socio-economic status (SES), student prior achievement (PRIOR), Faculty of Instruction (FACULTY), score of English 1 (ENGLISH_1), and semester in which students undertake English 2c (SEMESTER). The emergence of LV GENDER with an influence on English language proficiency (ENGLISH_2) with three manifest variates with $p=-0.08$ provides more information on the factors that are hypothesized to have an influence on English language proficiency. Since the LV GENDER with respect to the 1 to 4 scale (English language proficiency with one manifest variate) only produces a path coefficient that is lower than $\beta=0.07$, and the LV GENDER is removed from the model.

Issues arise with respect to which sets of scores are best employed. The answer to this question is concerned with how the English Language Proficiency scores can in future be used, namely:
(a) calculating the GPA;
(b) undertaking further learning in Listening, Writing and Reading;
(c) planning the teaching of further remedial work for student;
(d) assessing whether students should graduate, with a degree, and satisfy the requirement of proficiency in English.

Further investigation and analyses are needed for assessing, recording and developing English Language Proficiency in order that the teaching and learning of English (where the major is not learning the English language) can be effectively monitored and improved at the university. Some aspects of these issues are presented in the chapters that follow this chapter.

## CHAPTER 13 <br> ASSESSING AND DEVELOPING ENGLISH FOREIGN LANGUAGE PROFICIENCY

## Introduction

Chapter 12 is concerned with the advancement at the tertiary level of skills in the learning of English as a Foreign Language in non-English speaking countries. This chapter is concerned with measuring only three skills of English Foreign Language proficiency, namely, listening, writing, and reading that are tested on three different occasions to provide test scores, namely, the PRETEST, DIAGNOSTIC, and ELPT scores.

Chapter 13 employs variables and examines relationships between variables that relate to the components of English Foreign Language Proficiency Tests, namely, Listening Comprehension, Structure and Written Expression and Reading Comprehension. All three variables are measured in the form of IRT-scaled scores. This is because the IRT-scaled scores are considered to give strong estimates of English Foreign Language Proficiency that are recorded on an interval scale in order to measure growth in learning over time since the scores are also better able to be compared across successive occasions.

English skills as measured by Foreign Language Proficiency Tests normally consist of four independent components, namely: (a) Listening Comprehension, (b) Structure and Written Expression, (c) Reading Comprehension, and (d) Speaking in the Foreign Language. For several reasons, a foreign language speaking test was not employed in this study. The five reasons for this decision were as follows.

1. The type of English as a Foreign Language Proficiency Test available was an old version that covered only Listening, Structure and Written Expression, and Reading, Speaking was not included.
2. The university had a large number of students but the number of staff available to administer Speaking tests was limited.
3. There was little time available for conducting a Speaking test in the university program.
4. Students had limited opportunity to speak English in and outside the university.
5. A highly satisfactory Speaking test was not readily available.

Chapter 13 examines (a) whether advances over time in these three skills can be detected using the least squares strategies of statistical analyses by employing the statistical procedure developed by Wold $(1977 ; 1982)$ in the computer programs PLSPATH or LVPLS with a major problem on how Performance in English Language Proficiency is assessed and taught, and (b) which of the different methods of combination is best employed in the modelling process. These methods include using:
(a) unity mode and rejecting the combining of scores;
(b) using inward mode to maximize the variance explained and the predictive power of the latent variables constructed; and
(c) using outward mode to maximize the internal consistency (reliability) of the latent variables constructed.

There is also a major issue that arises from working with least squares procedures that involves the low value of the reliability of the gain scores that measure growth and development of the skills of listening, writing and reading over time as a result of instruction.

Alternative strategies are also examined using the computer program AMOS (Arbuckle, 1992; 1997; 1999; 2009), in which a maximum likelihood procedure of statistical analyses is employed in Chapter 14. The two different programs are employed because they permit the testing of different structural models that are of theoretical and practical interest. The strategies, namely outward mode, inward mode and unity mode, which are best involved in combining scores, are discussed in the section that follows. Initially in this chapter a model that employs the unity mode is considered. Subsequently the use of both the inward and outward modes is considered in an exploratory way using PLSPATH. Furthermore, a model is examined in a confirmatory way using AMOS and the magnitudes of model fit and the estimates of path coefficients are calculated and discussed.

## Unity Mode

The data set contains nine manifest variates that are associated with nine latent variables. Thus, a question advanced and answered in this section is: "Are there significant interrelationships between latent variables from Time 1, Time 2, to Time 3?"

Before this question is answered, it is important to state the characteristics of the nine measures associated with performance that are included in the analyses that follow. The variables are presented in Table 13.1

Table 13.1 Nine Latent Variables and Manifest Variates Included in the Analyses

| Latent Variable | Manifest Variate | Source | Coding | Mode |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| (Acronym) | Acronym | Description |  |  |  |
| LISTEN_1 | Listen_1 | Score of Listening Comprehension | Time 1 | IRT-scaled score | Unity |
| WRITE_1 | Write_1 | Score of Writing | Time 1 | IRT-scaled score | Unity |
| READ_1 | Read_1 | Score of Reading Comprehension | Time 1 | IRT-scaled score | Unity |
| LISTEN_2 | Listen_2 | Score of Listening Comprehension | Time 2 | IRT-scaled score | Unity |
| WRITE_2 | Write_2 | Score of Writing | Time 2 | IRT-scaled score | Unity |
| READ_2 | Read_2 | Score of Reading Comprehension | Time 2 | IRT-scaled score | Unity |
| LISTEN_3 | Listen_3 | Score of Listening Comprehension | Time 3 | IRT-scaled score | Unity |
| WRITE_3 | Write_3 | Score of Writing | Time 3 | IRT-scaled score | Unity |
| READ_3 | Read_3 | Score of Reading Comprehension | Time 3 | IRT-scaled score | Unity |

${ }^{\text {a}}$ Writing involves both Structure and Written Expression

Table 13.1 describes the nine variables that are each reflected by a single manifest variate in the unity mode. The model with the unity mode examines causal relations between the nine different variables and represents these relationships in a path diagram and the statistical procedure is referred to as path analysis. Figure 13.1 illustrates the hypothesised model involving the nine variables associated with performance assessed on three occasions.


Figure 13.1 The Hypothesised Model of the Nine Variables Associated with Performance Assessed on Three Occasions. ( $\mathrm{N}=1978$ )

Figure 13.1 shows the causal relationships among the nine different variables. There are 1978 cases involved in this study. The numbers 1 , 2 , or 3 which follows each of
the variables indicates the time when the event occurred. Symbols 1,2 , and 3 in Figure 13.2 indicate performances at Time 1, Time 2, and Time 3 respectively. In causal relationships earlier events always influence later events. It can be seen in Figure 13.1 that Time 1 performances influence Time 2 and Time 3 performances, while Time 2 performances also influence Time 3 performances.

## Mean, Standard Deviation, Minimum and Maximum Scores

Table 13.2 records the univariate statistics in terms of mean, standard deviation, and the minimum and maximum scores of the three variables, namely LISTEN, WRITE, and READ, that are recorded at Time 1 (T1), Time 2 (T2), to Time 3 (T3). These data involve 1978 cases. Of the three skills recorded in Table 13.2, although LISTEN has the lowest mean score at Time 1, LISTEN has larger mean scores at Time 2 and Time 3. At Time 3, LISTEN has the largest mean score value for this variable.

Table 13.2 Univariate Statistics

| Variable | Mean |  |  | SD |  |  |  | Minimum |  |  |  | Maximum |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | T 1 | T 2 | T 3 | T 1 | T 2 | T 3 | T 1 | T 2 | T 3 | T 1 | T 2 | T 3 |  |  |
| LISTEN | 40.7 | 46.7 | 53.9 | 4.9 | 5.6 | 5.9 | 28.0 | 24.0 | 24.0 | 61.0 | 67.0 | 68.0 |  |  |
| WRITE | 41.4 | 42.8 | 47.3 | 5.2 | 6.1 | 6.2 | 30.0 | 23.0 | 26.0 | 65.0 | 65.0 | 68.0 |  |  |
| READ | 42.0 | 40.5 | 47.9 | 5.6 | 4.7 | 5.7 | 24.0 | 26.0 | 26.0 | 66.0 | 53.0 | 67.0 |  |  |
| $\mathrm{~N}=1978$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

There is a considerable increase in the mean scores of LISTEN from Time 1, Time 2, to Time 3 , from 40.7, 46.7, to 53.9 respectively with standard deviations of 4.9, 5.6 , and 5.9 respectively at Time 1 , Time 2, and Time 3 . The minimum scores of Listening at Time 1, Time 2, and Time 3 are 28.0, 24.0 and 24.0 respectively, while the maximum scores are 61.0, 67.0 and 68.0 respectively over time. There is also an increase in the mean scores of writing skill (WRITE) from Time 1, Time 2 to Time 3 of $41.4,42.8$ to 47.3 respectively, with standard deviations of $5.2,6.1$ and 6.2 respectively over time. The minimum scores of writing at Time 1, Time 2 and Time 3 are from 30.0, 23.0 to 26.0 respectively, while the maximum scores are from 65.0, 65.0 to 68.0 respectively.

For reading skill, there is a drop in the mean scores from Time 1 to Time 2 of 1.50, but there is an increase in the mean score between Time 2 and Time 3 of 7.4.

Reading skill has standard deviations of 5.6, 4.7 and 5.7 respectively at Time 1, Time 2 and Time 3, with minimum scores of $24.0,26.0$ and 26.0 respectively. The maximum scores are 66.0, 53.0 and 67.0 at Time 1, Time 2 and Time 3 respectively. The mean score data recorded in Table 13.2 are presented graphically in Figure 13.2.


Figure 13.2 The Graphical Relationships of Listening, Writing and Reading from T1, T2 to T3

Figure 13.2 indicates that there are recognizable gains over time between $\mathrm{T} 1, \mathrm{~T} 2$ and T3 for Listening and Writing, with a recognizable drop in Reading scores between T 1 and T 2 , and a subsequent gain from T 2 to T 3 .

## Results of Nine Variables Analysis: Unity Mode

The inner model specifies the hypothesised relationships between the latent variables. The nine latent variables have been analysed and the results for the final model are presented in Figure 13.3.

The relationships between the latent variables are indicated in the path diagram by arrows that go from an earlier variable to a later variable. The significance of the path coefficients is discussed on p. 279. Moreover, the magnitudes of the relationships are shown by the significant path coefficient values for each path that are standardized regression coefficients and are recorded in the decimal form, ( $\beta=0.34$ ) as indicated for the path from the LV LISTEN_1 to LV LISTEN_2. The revised diagram for the path model relationships between the nine variables associated with performance is presented in Figure 13.3.


Figure 13.3 Model of Path Relationships Between the Nine Variables Associated with Performance. ( $\mathrm{N}=1978$ ) (only significant paths are recorded)

In the proposed model presented in Figure 13.1, the figure shows that there are three independent (exogenous) variables on the left hand side, namely LISTEN_1, WRITE_1 and READ_1 that are not influenced by other variables, while there are six dependent (endogenous) variables, namely LISTEN_2, WRITE_2, READ_2, LISTEN_3, WRITE_3, and READ_3 that are influenced by other variables. For this reason, the results of the analysis in this section are presented for only the six endogenous LVs. The use of endogenous and exogenous variables is discussed in Chapter 10.

Since the scores are obtained over time, the results of analysis are discussed in two sections, namely effects from Time 1 to Time 2 and effects from Time 1 and Time 2 to Time 3.

## Effects on Time 2 Variables: Effects on L2, W2 and R2

Referring to the Figure 13.3, the results of the analysis of the nine variables are summarised in Table 13.3. Table 13.3 records the variance explained and the standardized path coefficients as well as the correlation coefficients for the latent variables at Time 1 that have effects on the latent variables at Time 2. LISTEN_1,

WRITE_1 and READ_1 are identified as variables operating at Time 1, while LISTEN_2, WRITE_2 and READ_2 are identified as variables operating at Time 2.

Table 13.3 Direct Effects - Summary Table of Path and CorrelationCoefficients and Variance Explained

| Path Coefficient |  |  |  | Correlation Coefficient |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| N=1978 | LISTEN_2 | WRITE_2 | READ_2 | LISTEN_2 | WRITE_2 | READ_2 |  |
| $\mathbf{R}^{\mathbf{2}}$ | 0.30 | 0.31 | 0.17 |  |  |  |  |
| LISTEN_1 | 0.34 | 0.17 | 0.16 | 0.497 | 0.419 | 0.331 |  |
| WRITE_1 | 0.15 | 0.29 | 0.11 | 0.411 | 0.492 | 0.322 |  |
| READ_1 | 0.16 | 0.20 | 0.22 | 0.423 | 0.453 | 0.368 |  |
| $\mathrm{R}^{\mathbf{2}=}$ Variance Explained |  |  |  |  |  |  |  |

Table 13.3 shows that READ_2 has the smallest variance explained ( $\mathrm{R}^{\mathbf{2}}$ ) of 0.17 which indicates that the variance explained for this variable is 17 per cent, while other latent variables at Time 2, namely WRITE_2 and LISTEN_2 have explained variances of 0.31 and 0.30 respectively indicating that the variances explained for these variables are 31 and 30 per cent respectively.

Moreover, there are large increases in some prior performances from Time 1 to Time 2. Table 13.3 records that there are larger values of the beta coefficients from LISTEN_1 to LISTEN_2 of 0.34, from WRITE_1 to WRITE_2 of 0.29, and from READ_1 to READ_2 of 0.22 . Among the prior performances at Time 1 that have effects on performances in Time 2, Listening has the strongest effect ( $\beta=0.34$ ), followed by Writing ( $\beta=0.29$ ) and Reading ( $\beta=0.22$ ). It is possible that the use of the language laboratory that emphasizes Listening Comprehension has clearly beneficial effects on Listening performance between T 1 and T 2 .

While the advancement of Listening skills is likely to occur through the use of the language laboratory between T 1 and T 2 , it appears that reading skills are not emphasised during this period. It also appears that there are other factors that also influence the learning of English skills, other than prior performance. Information obtained from the interviews reported and discussed in Chapter 11 with the six lecturers indicates that although reading is also taught, in addition to listening, what lecturers taught, and the ways how listening is taught, as well as what students do outside of the class appear to have effects on the scores of listening. Students are taught explicit listening strategies, followed up by practising these strategies in order that these strategies can be used effectively and appropriately. Moreover, lecturers taught listening by practising listening in class, repeating the recorder many times
until students understood what the speakers were saying. The students become familiar with what they are listening to. This helps them improve their scores in listening. Moreover, the results of focus group discussion (FGD) with students indicate that the availability of technology helps them improve their listening skills in English. Students also like listening to music through technology such as MP3, and CDc. In addition, students like listening to news as well as watching movies through television or just from DVDs. These activities not only make students become familiar with native speakers of English but also help to improve their listening scores. Therefore, it is believed that teaching listening strategies, practising listening, and time investment, as well as extensive listening outside of the class are more likely to help students gain better scores for listening skills.

There are also some effects, although possibly weak effects operating between variables at Time 1 and variables at Time 2 that can possibly be explained as the outcomes of instruction such as from LISTEN_1 to WRITE_2 ( $\beta=0.17$ ). This implies positive effects if in practice the teaching of listening emphasises grammar and structure then students who are better listeners are more likely to improve in performance in WRITE_2. In other words, the teaching of grammar and structure is conducted through listening. Information obtained from the interviews with lecturers indicates that grammar and structure are taught through listening. Students also comment on the same thing. Apparently, lecturers employ 'bottom-up' strategies for teaching listening. In this situation, lecturers teach listening from words, sentences, and the forms of the language.

Table 13.3 shows that the latent variable READ_1 has an influence on WRITE_2 with a beta coefficient of 0.20 . This implies that if in practice, the teaching of reading is conducted through an emphasis on grammar and structure, it is likely to increase Writing performance over time. If students comprehend the text well because they have a good understanding of grammar and structure through their Reading skills, they are more likely to have better scores in grammar and structure in Writing. The results of the interviews with lecturers and focus group discussion (FGD) with students indicate that the way the lecturers teach (Quality of Instruction) is more likely to have an influence on students' performance.

Moreover, WRITE_1 has only a small effect on READ_2 with a beta coefficient of 0.11. This indicates that if in practice, the teaching of grammar and structure is conducted through reading, this may also help students gain higher scores in reading. Thus over and above the effects of practice in reading on skills from T1 to T2, it is the listening and writing skills at T 1 that also give rise to Reading performance at T 2 .

## Effects on Time 3: Effects on L3, W3 and R3

Figure 13.3 also shows that there are latent variables at Time 1 and Time 2 that have direct effects on latent variables at Time 3. Table 13.4 records the path and correlation coefficients for the latent variables at Time 1 and Time 2 that have direct effects on latent variables at Time 3. In addition to having direct effects, latent variables at Time 1 have indirect effects on latent variables at Time 3 as is presented in Table 13.5, while Table 13.6 records the total effects.

Table 13.4 Direct Effects - Summary Table of Path and Correlation Coefficients and Explained Variance

| N= 1978 | Path Coefficient |  | Correlation Coefficient |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | LISTEN_3 | WRITE_3 | READ_3 | LISTEN_3 | WRITE_3 | READ_3 |
| $\mathbf{R}^{2}$ | 0.21 | 0.11 | 0.17 |  | 0.183 | 0.257 |
| LISTEN_1 | 0.10 | ns | ns | 0.326 | 0.238 | 0.268 |
| WRITE_1 | ns | 0.08 | ns | 0.279 | 0.218 | 0.315 |
| READ_1 | 0.07 | ns | 0.14 | 0.296 | 0.320 |  |
| LISTEN_2 | 0.26 | ns | 0.11 | 0.412 | 0.26 | 0.318 |
| WRITE_2 | ns | 0.23 | 0.09 | 0.303 | 0.313 | 0.321 |
| READ_2 | 0.10 | ns | 0.15 | 0.305 | 0.219 |  |

ns: non-significant

Table 13.4 records that scores of listening comprehension at Time 3 (LISTEN_3) has the largest variance explained of 0.21 compared to reading and writing skills. This indicates that LISTEN_3 has 21 per cent of the variance explained. The latent variables (LV) READ_3 and WRITE_3 have 0.17 per cent and 0.11 per cent of variance explained respectively. Moreover, Table 13.4 only presents the standardised path coefficients of the latent variables at Time 1 and at Time 2 that have significant effects on the latent variables at Time 3, while there may be small effects that are operating, they are not statistically significant and are not presented and referred to here.

Table 13.4 shows that among the effects of prior performance in skills of English, namely, listening, writing, and reading from Time 2 to Time 3, Listening has the largest values compared to writing and reading. The effects of LISTEN_2 on

LISTEN_3, of WRITE_2 on WRITE_3, and of READ_2 on READ_3 are 0.26, 0.23 and 0.15 respectively. The effect of Listening 2 on Listening 3 is the largest ( $\beta=0.26$ ).

There are also lower values of the path coefficients that are statistically significant, such as LISTEN_1 on LISTEN_3 of 0.10, WRITE_1 on WRITE_3 of 0.08, and READ_1 on READ_3, of 0.14 . However, the last named effect is only marginally smaller than the effect of READ_2 on READ_3. Thus these results indicate that the effects of teaching and learning at Time 2 on Time 3 are marginally greater than the effects of teaching and learning at Time 1 on Time 3. The magnitudes of the direct effects from Time 1 to Time 2 are larger than the magnitudes of the direct effects from Time 2 to Time 3. Furthermore, the effects of teaching and learning between T1 and Time 2 of Course 1, and between T2 and Time 3 of Course 2 that are smaller raise another possible interpretation that instruction has had effects on students with a lower level of performance. This is evident from an examination of the correlation coefficients recorded in Tables 13.3 and 13.4 where the changes over time in the correlation coefficients can be clearly seen. Thus, it is possible that the instruction has benefited the lower performance students.

In other words, it appears that Course 2 that is conducted between Time 2 and Time 3 appears to help those students with a lower level of English proficiency increase their level of performance in English. This argument can be related to the results of PLSPATH analysis presented in Chapter 12 where there is a positive relationship between the LV SES and the level of student's English Language Proficiency. This indicates that students from richer families are more likely to outperform students from poorer families. Perhaps, these students from higher economic status home backgrounds do not only rely on their learning of English through formal classroom instruction. The higher the economic status the parents have, the larger the capacity of the parents to provide additional support for their children. This support can be the capacity to buy their children English literacy tools, such as learning English through technology, books, paying for an additional tuition course, or sending children to attend a private English course. Consequently, these children have greater opportunities to learn English. These opportunities help students from higher status home backgrounds to obtain higher scores in English. Therefore, the smaller effects of teaching and learning English between T2 and Time 3 of Course 2 than the effects
between T1 and T2 of Course 1 are possibly caused by the circumstances of students in which such students do not have adequate opportunities to learn English outside of class. Thus, these students use the learning of English in class as an opportunity to improve their English Language Proficiency. The availability of teacher and the course provided by the University help students with a lower level of English Language Proficiency improve their English performance.

Table 13.4 records that the values obtained for performance on the three skills from Time 2 to Time 3, namely LISTEN_2 to LISTEN_3, WRITE_2 to WRITE_3 and READ_2 to READ_3 that are $0.26,0.23$, and 0.15 respectively are larger than the values obtained for performance on the three skills from Time 1 to Time 3, namely LISTEN_1 to LISTEN_3, WRITE_1 to WRITE_3 and READ_1 to READ_3 with values of $0.10,0.08,0.14$ respectively. There are three possible explanations that can be argued for these results. First, there are two courses, namely Course 1 and Course 2 that are conducted on two different occasions. Course 1 is carried out between Time 1 and Time 2, while Course 2 is undertaken between Time 2 and Time 3. Second, since there are two courses conducted on separate occasions, there appear to be differences in the emphasis of instruction that each course provides. The differences in instruction have an effect on the magnitudes of performance on each skill recorded in Table 13.3 and Table 13.4. Third, there are differences in the time periods for the courses that are conducted. Course 1 (between Time 1 and Time 2) is given for students who have just entered the university, while Course 2 (between Time 2 and Time 3) is given to students who are about to graduate from the university since this involves one of the requirements for graduation. Consequently, the time gap between attending Course 1 and Course 2 may vary between students.

Table 13.5 summarises the indirect effects of LISTEN_1, WRITE_1 and READ_1 on these same skills at Time 3. The LV LISTEN_1 has an indirect effect on LISTEN_3 through LISTEN_2 with a size of effect of 0.11. LISTEN_1 also has an indirect effect on WRITE_3 through WRITE_2 with the smaller size of effect of 0.05. The indirect effect from LISTEN_1 to READ_3 is mediated by the effect of READ_2 on READ_3 with a size of effect of 0.08 .

Table 13.5 Indirect Effects- Summary Table of Path Coefficients

|  | LISTEN_3 | WRITE_3 | READ_3 |
| :--- | :---: | :---: | :---: |
| LISTEN_1 | 0.11 | 0.05 | 0.08 |
| WRITE_1 | 0.05 | 0.07 | 0.06 |
| READ_1 | 0.07 | 0.06 | 0.07 |

The LV WRITE_1 has the biggest indirect effect on WRITE_3 through WRITE_2 with the size of effect of $\beta=0.07$, while READ_1 has the same size ( $\mathrm{i}=0.07$ ) indirect effect on LISTEN_3 and READ_3 (i=0.07) through LISTEN_2 and READ_2 respectively. Thus, there are total effects from Time 1, Time 2 to Time 3 that are summarised in Table 13.6.

Table 13.6 Total Effects- Summary Table of Direct and Indirect Path Coefficients

|  | LISTEN_3 | WRITE_3 | READ_3 |
| :--- | :---: | :---: | :---: |
| LISTEN_1 | 0.21 | 0.05 | 0.10 |
| WRITE_1 | 0.10 | 0.15 | 0.10 |
| READ_1 | 0.13 | 0.10 | 0.21 |
| LISTEN_2 | 0.26 | 0.03 | 0.11 |
| WRITE_2 | 0.01 | 0.21 | 0.09 |
| READ_2 | 0.10 | 0.06 | 0.15 |

Table 13.6 records that there are four medium (greater than 0.20 ) total effects for the LVs from Time 1 to Time 3 and from Time 2 to Time 3. The total effect of the LV LISTEN_2 on LISTEN_3 is 0.26, while there is a total effect of 0.21 from LISTEN_1 to LISTEN_3, from WRITE_2 to WRITE_3 and from READ_1 to READ_3.

The results of the analyses above lead to the next question:
Are there any interrelationships between the nine variables (performances) from Time 1, Time 2, to Time 3?

## What Relationships Operate between the Nine Variables (Performances) at Time 1, Time 2, at Time 3?

The results of the nine variables analysis, as recorded in Figure 13.3 strongly indicate that there are interrelationships between the nine latent variables operating at Time 1, Time 2, and Time 3. Figure 13.4 presents the path effects that operate from Time 1 to Time 2, and from Time 2 to Time 3 as well as from Time 1 to Time 3 when the component variates are combined together and assessed in terms of Pretest (T1), Nostic (T2) and ELPT (T3).

Among other things that show the interrelationships among these measures of performances at Time 1, Time 2, and Time 3 and from Time 2 to Time 3, other factors may have effects on other aspects of performance. These factors involve the courses provided by the University under survey between Time 1 and Time 2 (Course 1), and between Time 2 and Time 3 (Course 2). The findings concerning the interrelationships among LVs associated with performance discussed in the previous section strongly suggest that the courses provided by the University are not only expected to interest students, but are also very likely to enable students to achieve better scores in English Language Proficiency. Hence, more detailed analyses of the effects of the courses on proficiency in English are discussed in the sections that follow. Moreover, since the PLSPATH program is able to analyse models in alternative modes, namely the outward mode and the inward mode, it is necessary to analyse models in both the outward mode as well as in the inward mode. Therefore, the next section presents models in the outward mode (reflective mode) and in the inward mode (formative mode) and discusses the effects of the two courses on English Language Proficiency.
Consequently, four questions are investigated with evidence in the sections that follow:
(a) Do the three components reflect proficiency in the English language?
(b) Do the three components form proficiency in the English language?
(c) What are the probable effects of the courses on the development of English Language Proficiency?
(d) How can English Language Proficiency be best developed in the University setting?

## Results from the PLS Path Analyses on the Effects of the Course on English Language Proficiency at the University Level

In this section a description of the examination of two different models in different modes, namely the outward mode and the inward mode as well as the effects of instruction involved in the course on English Language Proficiency are given and the results discussed. First, the process of developing the model is briefly described and this is followed by a separate discussion of the results of the outer and inner model analyses using PLSPATH. The section on the development of the model is an important section since this relates to the further models built by using the two different approaches, outward mode and inward mode, that require latent constructs
which are reflected or formed respectively by two or more manifest variates. These models differ from the model presented in Figure 13.3 which is built in the unity mode where-by each latent variable is reflected by only one manifest variate.

## Developing Models for English Foreign Language Proficiency Performance: Outward Mode and Inward Mode

PLSPATH employs both an outer model and an inner model. The outer model specifies the way in which MVs are linked to the LVs. The inner model specifies the relationships between the LVs. With respect to the outer model, it is necessary to specify whether the MVs are considered to form a particular LV (formative or inward mode), or whether the MVs are taken into account in constructing a particular LV (reflective or outward mode).

Given that the PLSPATH computer program provides for these two alternative approaches, namely, outward mode and inward mode, it is of considerable interest to compare the results of modelling using PLSPATH for the two different approaches, involving the outward and inward modes of construction. Consequently, it is important to identify which model provides a more coherent explanation and stronger estimates of the development of English Foreign Language Proficiency. This section first discusses the development of a model for Language Proficiency performance in the learning of English as a foreign language.

In the data sets, there are three components or measures that relate to English Language Proficiency performance. The measures involve Listen, Write, and Read. Each of the measures is obtained on three different occasions that are referred to as PRETEST, NOSTIC, and ELPT. PRETEST is stated to involve Time 1, NOSTIC is stated to involve Time 2, and ELPT is stated to involve Time 3. All three performance measures, PRETEST, NOSTIC, and ELPT, are treated as latent (unobserved) variables (LVs), while the components such as Listen, Write, and Read are treated as manifest (observed) variates. Because there are three different occasions for the performance measures (Time 1, Time 2, and Time 3) of Listen, Write, and Read the components are defined as Listen1, Write1, Read1, Listen2, Write2, Read2, Listen3, Write3, and Read3. All these variates involve measurements in the form of IRT-scaled scores.

A considerable body of analysis is required in order to develop the best model of English Foreign Language Proficiency Performance. Different models are initially advanced in order to identify which model provides the best estimates compared to the others. It starts by modelling, using PLSPATH analysis, with different modes in each model. Since there are three LVs (latent variables), namely PRETEST, NOSTIC and ELPT which have three MVs (manifest variates), namely Listening, Writing, and Reading, there are the possibilities of developing a model using different modes of model structure, such as PRETEST in the inward mode, NOSTIC in the inward mode, and ELPT in the outward mode. Another model with a different mode was tried, such as PRETEST in the outward mode, NOSTIC in the outward mode, and ELPT in the inward mode. However, these models did not produce highly meaningful results. Therefore, a decision was made that involved developing two models using the same mode in each model. One model is structured in the outward mode, while a second model is structured in the inward mode.

Table 13.7 shows a list of the variables operating in the PLSPATH analysis on English Foreign Language Proficiency. Both variable names and their acronyms are recorded for the latent variables and the manifest variates involved.

Table 13.7 Latent and Manifest Variables Included in ELPT Analysis

| Latent Variable | Manifest Variate | Source | Coding | Mode |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| (Acronym) | Acronym | Description |  |  |  |
| Time 1 | Listen1 | Score of Listening at Time 1 | File | IRT-scaled Score | Outward or |
| PRETEST | Write1 | Score of Writing at Time 1 | File |  | Inward |
|  | Read1 | Score of Reading at Time 1 | File |  |  |
| Time2 | Listen2 | Score of Listening at Time 2 | File | IRT-scaled Score | Outward or |
| NOSTIC | Write2 | Score of Writing at Time 2 | File |  | Inward |
|  | Read2 | Score of Reading at Time 2 | File |  |  |
| Time 3 | Listen3 | Score of Listening at Time 3 | File | IRT-scaled Score | Outward or |
| ELPT | Write3 | Score of Writing at Time 3 | File |  | Inward |
|  | Read3 | Score of Reading at Time 3 | File |  |  |

Writing: Structure and Written Expression

Initially for the latent variables, namely, PRETEST, NOSTIC, and ELPT the outward mode is employed and these variables are reflected by their manifest (observed) variates. However, consideration is then given to constructing a model using the inward mode. This is carried out because it is important not only to compare the results of PLSPATH analysis in the outward and inward modes but also
to see which one provides the most meaningful and coherent model. From the results of the analyses it is necessary to justify whether English Foreign Language Proficiency is most meaningfully reflected by the three constituent skills, namely, Listening, Writing, and Reading in the outward mode or whether English Language Proficiency is considered better as being formed by the three skills, namely, Listening, Writing, and Reading in the inward mode.

Figures 13.4 (a) and (b) present the hypothesized path models for the analysis of the data sets using the PLSPATH computer program (Sellin, 1990). Figure 13.4 (a) depicts a model of the English Language Proficiency in the outward mode, while Figure 13.4 (b) depicts a model of the English Language Proficiency in the inward mode.


Figure 13.4 (a) Hypothesized Model of the English Language Proficiency: Outward Mode


Figure 13.4 (b) Hypothesized Model of the English Language Proficiency: Inward Mode

The latent variable on the left hand side of the Figures 13.4 (a) and 13.4 (b), namely, PRETEST (T1) is categorized as an exogenous variable (independent variable) since this variable is not influenced by other variables, but may influence the other variables. In the path model, this variable is hypothesized to influence causally the
two latent variables to its right. This is indicated by the arrow that goes from the exogenous variable to the other variables, while there is no arrow coming to it.

Figures 13.4 ( a and b ) also show that there are two latent variables hypothesized to influence English Foreign Language Proficiency (ELPT), namely, PRETEST at Time 1, and NOSTIC at Time 2. In the path models, these three variables are treated as latent variables (LVs) in the inner model. In general, the development and refining of the models are undertaken on the basis the principles of parsimony and coherence. Keeves and Sellin (1994) and Tuijnman and Keeves (1994) explained that parsimony referred to constructing as simple a model as was meaningful, while coherence referred to the logical and chronological order of the variables in the model and their causal relationships in a theoretical sense.

## The Differences between the Models that Involve the Outward Mode

In this study all manifest variates that produce the three English Foreign Language Proficiency Test scores operate in two different directions, namely, the outward mode and the inward mode. In Figure 13.4a, all variables of interest are reflected by three manifest variates (MVs) as is indicated by the arrows that go from the latent variables (LVs) to their manifest variates (MVs). This model is structured using the outward mode. In Figure 13.4b, all three latent variables are formed by three manifest variates as is indicated by the arrows that come from the manifest variates (MVs) to their latent variables (LVs). This model is structured using the inward mode.

It is important to note that the redirection of the mode of the operation within the two models is necessary in order to provide a clear interpretation of the difference in causal operation of the two models and to see whether there are differences in the contributions of the manifest variates associated with the latent variable scores.

Since there are two models that are presented in different modes, namely, the outward mode and the inward mode, the results of the PLSPATH analysis in this section are reported concurrently for making comparisons between the two sets of results. There are two main parts to the examination of the results of the analyses. The first part reports the results for the outer model for factors influencing English Language Proficiency and examines the strengths of the relationships between the manifest variates and their corresponding latent variables. The second part reports
the results for the inner model, which examines the strengths of the relationships between each latent variable and the other latent variables.

## Outer Model Results for Model of English Language Proficiency Performance: Outward Mode and Inward Mode

This section discusses the results of the outer model for the model of English Foreign Language Proficiency Performance in the outward mode and the inward mode. Table 13.8 records the loadings as well as the jackknife standard errors of the estimates of the outer model PLSPATH analysis for the outward mode as well as the weights and standard errors of the results of the outer model PLSPATH analysis for the inward mode. Both the models in Figures 13.4a and 13.4b are constructed involving three different times, namely Time 1 (T1), Time 2 (T2), and Time 3 (T3).
The main research questions in this section are:

1. Do the three skills reflect proficiency in the use of the English language? or
2. Do the three skills form proficiency in the use of the English language?

Table 13.8 presents the outer model results for the model of English Foreign Language Proficiency. This section first reports the results of the outer model analysis in the outward mode, followed by the results of outer model analysis in the inward mode. Pedhazur (1982) and Sellin and Keeves (1992c) recommended that MVs should be excluded from the outer model equation, if their associated weight is less than 0.10 or if their associated loading becomes less than 0.40 . These MVs can be dropped from the construct because they are considered statistically not to influence the 'explanatory power' of the construct.
The discussion of the strength of relationships between LVs and their corresponding MVs is presented as follows.

## Outer Model PLSPATH Result: Outward Mode Pretest (PRETEST)

The Pretest involves the scores of the students in an English test when they are admitted to the University. In the model, pretest (PRETEST) is reflected by three manifest variates, namely, Listen1, Write1, and Read1. The outer model results in Table 13.8 show that there is little difference in the values of the loadings between the MVs, namely Listen1, Write1, and Read1.

Table 13.8 Outer Model Results for Model of English Language Proficiency

| Outer Model PLS |  | Time 1 |  | Time 2 |  | Time 3 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Outward Mode Loadings ( $\lambda$ ) |  | Loading | se | Loading | se | Loading | se |
| Pretest <br> PRETEST | Listen1 | 0.81 | 0.007 |  |  |  |  |
|  | Write1 | 0.83 | 0.008 |  |  |  |  |
|  | Read1 | 0.84 | 0.001 |  |  |  |  |
| Diagnostic <br> NOSTIC | Listen2 |  |  | 0.84 | 0.002 |  |  |
|  | Write2 |  |  | 0.85 | 0.001 |  |  |
|  | Read2 |  |  | 0.78 | 0.001 |  |  |
| Proficiency ELPT | Listen3 |  |  |  |  | 0.85 | 0.009 |
|  | Write3 |  |  |  |  | 0.81 | 0.026 |
|  | Read3 |  |  |  |  | 0.82 | 0.028 |
| Inward Mode Weights ( $\boldsymbol{\beta}$ ) and Loadings ( $\lambda)^{\text {a }}$ |  | Weight | Loading | Weight | Loading | Weight | Loading |
| Pretest | Listen1 | 0.47 | 0.84 |  |  |  |  |
| PRETEST | Write1 | 0.33 | 0.80 |  |  |  |  |
|  | Read1 | 0.40 | 0.84 |  |  |  |  |
| Diagnostic | Listen2 |  |  | 0.55 | 0.90 |  |  |
| NOSTIC | Write2 |  |  | 0.40 | 0.83 |  |  |
|  | Read2 |  |  | 0.24 | 0.71 |  |  |
| Proficiency | Listen3 |  |  |  |  | 0.66 | 0.90 |
| ELPT | Write3 |  |  |  |  | 0.00 | 0.64 |
|  | Read3 |  |  |  |  | 0.50 | 0.82 |

${ }^{a}$ These coefficients are standardized regression coefficients with small jackknife standard error values that indicate the effects of multicollinearity and problems of rounding involved in estimation.

Table 13.8 shows that the manifest variate Read1 appears to contribute strongly to reflecting the structure of the PRETEST construct with the factor loading of 0.84 (0.001), while for Listen1 and Write1 there are loadings of 0.81 ( 0.007 ) and 0.83 (0.008) respectively. Consequently, out of the three MVs that reflect the PRETEST construct, Read1 can be considered to be the marginally strongest reflector of the PRETEST construct in the outward mode. The revised figure for this outward mode model of English Language proficiency is presented in Figure 13.5a.


Figure 13.5 (a) Model of the English Language Proficiency: Outward Mode

## Diagnostic Test (NOSTIC)

NOSTIC indicates the scores of students on the Diagnostic test. The Diagnostic test is conducted on the first day when students enrolled in English 2. In the model, Diagnostic (NOSTIC) is reflected by three manifest variates, namely, Listen2, Write2, and Read2. The results summarised in Table 13.8 show that among other manifest variates, Read2 has the weakest contribution to reflecting the structure of the NOSTIC construct with a factor loading of 0.78 (0.00), while Listen2 and Write2 have loadings of $0.84(0.00)$ and $0.85(0.00)$ respectively. Although, there is a very little difference in the values of the loadings for Listen2 and Write2, Write 2 can be considered to be the strongest reflector of the NOSTIC construct in the outward mode. These results indicate that during the period between Time 1 and Time 2, the contributions of Listening and Writing have changed little, while the contribution of Reading has declined. This finding suggests that performance in Reading declined relative to performance in Listening and Writing. The reason for this appears to be a result of assistance given to Listening at the Language Laboratory and an emphasis placed on teaching writing through grammar and structure during the period of time under consideration in Course 1, and a possible lack of emphasis placed on Reading during the same period of Course 1 .

## Proficiency (ELPT)

Proficiency (ELPT) involves the scores of students on the English Language Proficiency Test on the third occasion of testing at the end of the course, namely Time 3. In the model, Proficiency (ELPT) is reflected by three manifest variates, namely, Listen3, Write3, and Read3. The results recorded in Table 13.8 show that between the three manifest variates, Listening contributes most strongly to reflecting the structure of the ELPT construct with the factor loading being 0.85 ( 0.01 ), while Writing and Reading have loadings of $0.81(0.03)$ and $0.82(0.03)$ respectively. There is very little difference in the values of the loadings between Writing and Reading and Listening. However, Listening can be considered to be the strongest contributor to the ELPT construct in its reflection by the outward mode, followed by the contribution of Reading on ELPT, although Listening has changed little in its contribution between Time 2 and Time 3. This change in the contribution of Reading to English Language Proficiency appears to be a consequence of the emphasis placed on Reading performance during this second period of Time and during Course 2. However, the contribution of Writing has declined in its loading between Time 2 and

Time 3. The loadings and the standard errors (se) on ELPT indicate that some of the good listeners and good readers may be poor writers, and some poor listeners and poor readers may be good writers.

## Outer Model PLSPATH Result: Inward Mode

Pretest (PRETEST)
In this second model, the LV PRETEST is formed by three manifest variates, namely Listen1, Write1 and Read1. The outer model results in Table 13.8 show that there are sizeable differences in the values of the standardized regression weights among the MVs of Listen1, Write1 and Read1. The manifest variate of Listen1 appears to contribute strongly to the formation of the PRETEST construct with a weight of 0.47 followed by Read1 with a weight of 0.40 . Write 1 has the lowest contribution to the formation of PRETEST with a weight of 0.33 . Consequently, out of the three MVs that form the PRETEST construct, Listen1 can be considered to have the strongest contribution to the PRETEST construct in the inward mode. It must be noted that the tolerances do not exceed 0.50 , and there are no problems arising from suppressor effects. The revised figures for this inward mode model of English Language Proficiency are presented in Figure 13.5b.


Figure 13.5 (b) Model of the English Language Proficiency: Inward Mode

## Diagnostic Test (NOSTIC)

The outer model results in Table 13.8 show that there are sizeable differences in the values of the weights among the manifest variates of Listen2, Write2, and Read2 between the two occasions of Time 1 and Time 2. It can be seen from Table 13.8 that

Read2 has a weight of roughly a half of the weights of Listen2 and Write2, since Read2 has the smallest weight with a value of 0.24 , while Listen 2 has the greatest weight with the value of 0.55 . Write 2 also has a sizeable increase in weight with $\beta=$ 0.40. Not only does Listen 2 have the highest value of weight at Time 2, it also records the largest increase in weight between Time 1 and Time 2 . Moreover, Read2, not only has the lowest weight at Time 2, it also has a substantial decline in its contribution to the structure of English Foreign Language Proficiency between Time 1 and Time 2. Similar to Time 1, Listen 2 is the strongest manifest variate with the greatest increase in its contribution to the NOSTIC construct in the inward mode. This change appears to be a consequence of the opportunities provided for the development of the skills of listening through practice in a language laboratory and other factors that help increase the scores of listening comprehension of students between Time 1 and Time 2, but this is associated with a decline in the contribution of Reading to the structure of English Language Proficiency over the same time period of Course 1 .

## Proficiency (ELPT)

Proficiency (ELPT) is also hypothesized to be formed by three manifest variates, namely Listen3, Write3, and Read3. Table 13.8 shows that with respect to the other Times (Time 1 and Time 2), at Time 3 Listen3 and Read3 have the sole contributions to the structure of ELPT as indicated by the weights of 0.66 (0.01) and 0.50 (0.01) respectively. Surprisingly, Write3 no longer contributes, since it has a non-significant or zero weight and with problems associated with multicollinearity and a suppressor effect. Thus, Write $\mathbf{3}$ is dropped from the ELPT construct. Among the manifest variates that form the ELPT construct, Listen3 can be considered to be the strongest contributor to the ELPT construct with an increase in its weight between Time 2 and Time 3 during Course 2. Moreover, Read3 increases greatly in its contribution to the structure of ELPT between Time 2 and Time 3, and this appears to be a consequence of greater emphasis placed on Reading during this period, but this seems to be at the expense of the contribution of writing skills that may arise from the teaching in Course 2.

## Inner Model Results for Model of English Language Proficiency: Outward Mode or Inward Mode?

This section discusses concurrently the results of the inner model analyses for the model of English Foreign Language Proficiency in the outward mode and the inward mode. The inner model indicates the relationship between latent variables (LVs). There are three LVs (latent variables) in the model, namely PRETEST, NOSTIC, and ELPT. Table 13.9 records the weight ( $\beta$ ), jackknife standard error (se) and correlation (r) of the results of the inner model PLSPATH analysis for the outward mode as well as the results of the inner model PLSPATH analysis for the inward mode.

Although the results of inner model analysis record beta coefficients $(\beta)$, correlation coefficients (r), deltas and tolerances, Table 13.9 merely records beta coefficients, correlation coefficients and standard errors (SE) from the jackknife results, since no problems arise that involve the values of delta and tolerance. The path models in Figures 13.5 ( a and b ) depict the relationships that operate between the three LVs in the model. PRETEST is an independent variable (exogenous) because this variable is not influenced by other variables, but it may influence other variables. NOSTIC is a dependent variable (endogenous) because it is influenced by another variable, PRETEST. ELPT is also a dependent variable because it is influenced by two other variables, namely PRETEST and NOSTIC. The path coefficients for the causal relationships that influence English Foreign Language Proficiency are presented in Figures 13.5 (a) and 13.5 (b) respectively for the outward mode and the inward mode models.

There are only slight differences in the inner model path coefficients recorded in the comparisons between the two models, in spite of the difference in structure of the outer models particularly at Time 3, where Writing does not contribute to the formation of the English Foreign Language Proficiency latent variable. Consequently, the main research questions relating to the inner models can be considered together for the outward and inward mode models.

The main research questions in this section are

1. Does PRETEST influence NOSTIC?
2. Does NOSTIC influence ELPT?
3. Does PRETEST influence ELPT?

The results of the analysis in this section are considered for only the two endogenous LVs, namely NOSTIC and ELPT. Table 13.9 presents the inner model results for the model of English Language Proficiency.

## Inner Model PLSPATH Result: Outward Mode and Inward Mode.

## Diagnostic Test (NOSTIC)

In the path model in Figures 13.5 (a and b), NOSTIC is hypothesized to be influenced by the LV PRETEST. The results of the analysis indicate that the variable PRETEST has significant effects on the diagnostic test (NOSTIC) with a beta coefficient of 0.61 ( 0.00 ) and correlation coefficient of 0.61 in the outward mode model, while in the inward mode model PRETEST has a slightly higher value of the beta coefficient of 0.62 ( 0.03 ) and correlation coefficient of 0.62 . The inner model results of analysis in the inward mode produces a marginally larger path effect than in the outward mode, as a consequence of the fact that the weights are estimated to maximize the variances explained.

The results in Table 13.9 also indicate that the R-square index for NOSTIC is 0.37 in the outward mode and 0.38 in the inward mode which indicates that the variances explained for this variable in the outward and inward modes are 37 per cent and 38 per cent respectively, which involve residuals paths presented in Figure 13.5 (a and b) for NOSTIC of 0.79 in both cases.

Table 13.9 Inner Model Results for the Models of English Language Proficiency

| Inner Model Results |  | Outward Mode |  |  |  | Inward Mode |  |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| PLSPATH |  | Weight <br> $(\boldsymbol{\beta})$ | JknStd <br> $(\mathbf{s e})$ | Corr <br> $(\mathbf{r})$ | Weight <br> $(\boldsymbol{\beta})$ | JknStd <br> $(\mathbf{s e})$ | Corr <br> $(\mathbf{r})$ |
| Dependent Variable | NOSTIC |  |  |  |  |  |  |
| Independent Variable | PRETEST | 0.61 | 0.00 | 0.61 | 0.62 | 0.03 | 0.62 |
| Dependent Variable | ELPT |  |  |  |  |  |  |
| Independent Variable | PRETEST | 0.18 | 0.03 | 0.39 | 0.19 | 0.03 | 0.41 |
| Independent Variable | NOSTIC | 0.34 | 0.03 | 0.45 | 0.35 | 0.03 | 0.47 |
| Variance |  | Pred LV | $\mathbf{R}^{\mathbf{2}}$ | $\mathbf{Q}^{\mathbf{2}}$ | Pred LV | $\mathbf{R}^{\mathbf{2}}$ | $\mathbf{Q}^{\mathbf{2}}$ |
| Dependent Variable | NOSTIC | 1 | 0.37 | 0.37 | 1 | 0.38 | 0.38 |
| Dependent Variable | ELPT | 2 | 0.23 | 0.22 | 2 | 0.24 | 0.24 |

## Proficiency Test (ELPT)

In the proposed model presented in Figure 13.5 (a and b), ELPT is hypothesized to be influenced by two LVs, namely, PRETEST and NOSTIC. ELPT involves IRT-
scaled scores that are calculated as an average. The results of the inner model analysis indicate that the variable NOSTIC has a greater beta coefficient than the variable PRETEST, this probably arises from its more proximal nature with respect to time of operation. The LV NOSTIC has a very significant effect on ELPT with a beta coefficient of $0.34(0.03)$ and a correlation coefficient of 0.45 in the outward mode model, while in the inward mode model NOSTIC has a beta coefficient of 0.35 ( 0.03 ) and a correlation coefficient of 0.47 . There is also little difference in the values of the beta coefficients for the LV PRETEST of 0.18 (0.03) and 0.19 (0.03) respectively and with correlation coefficients of 0.39 and 0.41 in the outward mode model and in the inward mode model respectively.

The results in Table 13.9 also indicate that the R-square index for the ELPT is 0.23 in the outward mode model and 0.24 in the inward mode model which indicates that the variance explained for this variable in the outward and inward mode models are 23 per cent and 24 per cent respectively. This involves residual paths presented in Figures 13.5 ( a and b) for ELPT of 0.88 and 0.87 respectively. Table 13.10 records the indirect effects for the outward and inward mode models.

Table 13.10 The Indirect Effect on ELPT of the Outward and Inward Mode

| VARIABLE | OUTWARD | INWARD |
| :--- | :--- | :--- |
| PRETEST | ELPT | ELPT |
|  | 0.21 | 0.22 |

In addition to the direct effects for the outward and inward mode models of 0.18 and 0.19 respectively, there are indirect effects that are estimated by the products of the two path coefficients associated with mediated effects of 0.21 ( $0.61 \times 0.34$ ) and 0.22 ( $0.62 \times 0.35$ ) for the two models. Thus there are total effects for the two models of 0.39 and 0.41 for the estimated effects of PRETEST on ELPT for the outward and inward mode models respectively. Table 13.11 summarises the total effects of PRETEST to ELPT for the outward and inward mode models.

Table 13.11 Total Effects on ELPT of the Outward and Inward Mode Models

| VARIABLE | OUTWARD | INWARD |
| :--- | :--- | :--- |
| PRETEST | ELPT | ELPT |
|  | 0.39 | 0.41 |

In conclusion, the variables that are hypothesized to influence the final English Foreign Language Proficiency Test (ELPT) have significant effects on their
dependent variables. For example, PRETEST has a very significant effect on NOSTIC. This indicates that students who have good scores in the PRETEST perform better in the diagnostic test (NOSTIC). It is important to note that Course 1 is conducted between PRETEST (Time 1) and NOSTIC (Time 2). The availability of Course $1^{13}$ enables students to obtain better scores in NOSTIC. It is also important to note that Time 2 (NOSTIC) is at the beginning of Course $2^{14}$. Thus the length of time between T1 and T2 may vary greatly between students, and this possibly influences students' scores obtained at Time 2 (NOSTIC). It is because some students take NOSTIC straightaway after their completion of Course 1, but some students take NOSTIC at later years closer to their graduation. Students who take NOSTIC straightaway after completing Course 1 obtain more benefits than students who take NOSTIC at later years. The reason is probably that students still remember their knowledge about the English language taught in Course 1, and this enables them to have better scores in English.

Moreover, there are two predictors of ELPT (T3), namely PRETEST (T1) and NOSTIC (T2), and it is recorded in Table 13.9 that NOSTIC ( $\beta=0.34$ ) has a stronger direct effect than PRETEST $(\beta=0.18)$ on ELPT. This indicates that the availability of Course 2 that is conducted between NOSTIC and ELPT enables students to gain better scores in English. This implies that students who take NOSTIC are more likely to have better scores at their final test (ELPT). Since NOSTIC is at the beginning of Course 2, and the availability of Course 2 enables students to gain higher scores in English, consequently, Course 2 is important and its availability should be continued, and not omitted. However, the results of inner model in Table 13.9 indicate that the beta coefficient of the direct effects from NOSTIC to ELPT ( $\beta=0.34$ ) is smaller than the effect from PRETEST to NOSTIC ( $\beta=0.61$ ). This suggests that English 2c (Course 2) that is conducted between Time 2 (NOSTIC) and Time 3 (ELPT) has greater impact on students with a lower level of English Language Proficiency. This also indicates that if these students just take PRETEST then take ELPT, without taking NOSTIC, they do not gain scores that are as high as students who take NOSTIC. The positive relationship between NOSTIC and ELPT also implies that the higher the scores students obtain on NOSTIC, the better the scores students obtain on ELPT. Therefore, students who have already had good performance in

[^11]English are more likely to have higher scores in their final test if they take advantage by enrolling in Course 2. Some students who attain an appropriate standard of performance of graduation did not take English 2c and their scores at T2 was reassigned as their score for T3.

PRETEST also has a direct effect on ELPT (0.21) in the outward mode operating through NOSTIC produces the total effect of 0.39. This total effect of PRETEST (0.39) on ELPT is necessarily larger than the direct effect of PRETEST on ELPT. This result of the analysis also raises the possibility that there are students who do not take Course 2 since these students probably had good performance in English. This argument can be explained through the effects of Time 2 (NOSTIC) on Time 3 (ELPT) that are smaller than the effects between Time 1 (PRETEST) and Time 2 (NOSTIC). These results suggest that Course 2 assists students with a lower level of English Language Proficiency to gain better scores. The total effect of PRETEST (T1) on ELPT (T3) implies that students with a higher level of English Language Proficiency possibly do not take Course 2, and this is allowed by the University, consequently, the effect of NOSTIC on ELPT is smaller than the effect of PRETEST on NOSTIC. Therefore, these results of inner model analyses may be interpreted in several ways, and they are important in order that policies can be better shaped for the future benefits for the University under survey, for other universities in Indonesia, and surrounding countries.

## Developing Model of English Language Proficiency: Outward Mode or Inward Mode?

The results of the outer model and the inner model analyses for the models of English Language Proficiency recorded in Table 13.8 as well as Table 13.9 indicate that the outward mode model is accepted as the more parsimonious and coherent approach when compared to the inward mode model.

After examining values of the relationships between MVs in the outward as well as inward modes, the model of English Foreign Language Proficiency is more meaningfully estimated in the outward mode. This indicates that English Foreign Language Proficiency is best considered as being reflected, and not formed, by three components, Listening, Writing, and Reading.

Thus the more meaningful model of English Foreign Language Proficiency is illustrated graphically in Figure 13.6 in the outward mode.


## Figure 13.6 A Model of English Language Proficiency

The diagram presented in Figure 13.6 involves three times, namely T1, T2, and T3. T1 indicates Time 1, T2 indicates Time 2 and T3 indicates Time 3 that are related to the Courses provided by the University. Since there are three occasions involved, it is consequently of interest to discuss the effects of the Courses on English Language Proficiency as well as to examine how great are the effects of the Courses and the tests that are conducted on the three occasions at Time 1, Time 2, and Time 3. Moreover, the Courses lead to the assessment of the three skills, namely, Listening, Writing, and Reading and each of these skills is examined on each of the three occasions. A detailed discussion of the treatment effects provided by the courses can now be presented in the section that follows.

## The Effects of Treatment on Proficiency: Exploratory Analysis

This section reports the effect of the courses (treatment) on English Language Proficiency. The courses in the University under survey are conducted between Time 1 and Time 2 for Course 1 and between Time 2 and Time 3 for Course 2. Course 1 emphasizes the development of writing skills. Moreover, opportunities are provided for the development of the skills of listening through practice in a language laboratory. Course 2 focuses on the development of reading skills. These courses are designed to provide students with skills in listening, writing and reading in order that
they are better able to achieve proficiency in English. Hence, it is of interest to discuss whether there are effects observed of the two courses on proficiency in English. The results of the treatment effects are presented in Table 13.12.

Table 13.12 The Effect of the Course on Proficiency


Table 13.12 records the results of the PLSPATH analysis of the treatment effects for the outward mode and for the inward mode. There are three tests with identifications 'Time 1', 'Time 2', and 'Time 3'. At Time 1 the test is identified as T1 (in Figures 13.5 ( a and b ), it is related to the PRETEST). At Time 2 the test is identified as T2 (in the path models that are presented in Figures 13.5 ( a and b ): it is related to NOSTIC). At Time 3 the test is identified as T3 (in Figures 13.5 ( a and b): it is related to ELPT).

The main research question in this section is:

## What are the effects of the courses (treatment) on proficiency?

Since the PLSPATH models involve two different modes, namely, the outward mode and the inward mode, this section reports the results of the analyses, first, for the outward mode, and then for the inward mode. There are three skills of English Foreign Language Proficiency that are under consideration, namely, Listening, Writing and Reading. This section begins with a discussion first for Listening, then for Writing, and then for Reading.

## Listening: Outward Mode Model and Inward Mode Model

It can be seen from Table 13.12 in the outward mode model that there are small increases in the factor loadings of Listening from Time 1, Time 2, to Time 3. Listening has factor loadings of 0.81 at Time $1,0.84$ at Time 2, and 0.85 at Time 3. The calculations of the effects of treatment in the courses from Time 1 to Time 2 and from Time 2 to Time 3 in the outward mode model are 0.03 and 0.01 respectively. These gains are positive but weak.

In the inward mode model, the weights of Listening increase significantly from Time 1, to Time 2, and from Time 2 to Time 3 with the values of $0.47,0.55$ and 0.66 respectively. The calculations of the effects of the courses for Listening from Time 1 to Time 2 and from Time 2 to Time 3 are 0.08 and 0.11 respectively. The effect of courses recorded from Time 2 to Time 3 is stronger than the effect of treatment between Time 1 and Time 2. This indicates that the availability of Course 1 is important since the treatment has effects on the contribution of Listening scores to the Proficiency scores after the effects of Reading and Writing are taken into consideration. The results indicate that the opportunities given in the development of Listening skill at the language laboratory help to improve the Listening comprehension scores. However, other factors seem to contribute to the improvement of Listening skill, particularly when the effects of the instruction appear to continue from Time 2 to Time 3.

## Writing (Structure and Written Expression): Outward Mode and Inward Mode Models

Table 13.12 shows that in the outward mode model the factor loadings of Writing increase from Time 1 to Time 2, from 0.83 to 0.85 . However, the value of the loading drops at Time 3 to 0.81 . The effect of treatment from Time 1 to Time 2 is 0.02 . In the inward mode model, there is also a sizeable increase in the values of the weights of Writing from 0.33 to 0.40 from Time 1 to Time 2. However, at Time 3 Writing makes no contribution to the Proficiency score. The effect of treatment from Time 1 to Time 2 is sizeable, 0.07 , but from Time 2 to Time 3 , the effect involves a substantial loss of -0.40 in the inward mode model. Thus, in the outward mode model there is a small positive effect from Time 1 to Time 2 of 0.07 and a strong negative effect from Time 2 to Time 3 of -0.40 . The increase in the value of the loading and
weight of Writing from Time 1 to Time 2 indicates the emphasis of instruction on the development of writing skills through an explanation of grammatical structure and an increase in vocabulary involving lexical skills. The decrease in the value of the loading and weight of Writing from Time 2 to Time 3 suggests that the instruction is not focused on Writing, but on the other skills.

## Reading: Outward Mode and Inward Mode Models

Table 13.12 records that in the outward mode model there is an increase in the value of the loadings from Time 2 to Time 3. The increase in the loadings for Reading is from 0.78 to 0.82 , namely, 0.04 . The values of the loadings for Reading from Time 1 to Time 2 do not indicate an increase, since there is a drop in the loadings from 0.84 to 0.78 of -0.06 . The effect of treatment that is produced from Time 2 to Time 3 of 0.04 is positive but small.

However, in the inward mode model there is a very significant increase in the value of the Reading weights from Time 2 to Time 3 since the weight is 0.24 at Time 2 and 0.50 at Time 3. This suggests a very large effect of the treatment from Time 2 to Time 3 of 0.26 . This increase compensates for a drop in value of the weights of 0.16 from Time 1 at 0.40 to Time 2 at 0.24 . This indicates that between Time 2 and Time 3 the emphasis of instruction is on the development of reading skills is effective.

Referring to evidence presented in Chapter 11, courses (treatment) provided by the University have effects on English Language Proficiency. The strength of treatment (courses) emphasis, whether strong, moderate, weak or none, is summarized as well as the values of loadings and weights of the three components, namely Listening, Writing, and Reading on the three different occasions, whether they increase or drop from Time to Time, are summarized in Table 13.13.

Table 13.13 Summary of the Loadings and Weights of the Three Components in the Outward Mode and In ward Mode

| Outward <br> Mode | Loadings | Time 1 | Course 1 | Effect | Time 2 | Course 2 | Effect | Time 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Listening | 0.81 | Strong Treatment | rise | 0.84 | Moderate Treatment | rise | 0.85 |
|  | Writing | 0.83 | Strong Treatment | rise | 0.85 | No Treatment | drop | 0.81 |
|  | Reading | 0.84 | No Treatment | drop | 0.78 | Strong Treatment | rise | 0.82 |
| Inward <br> Mode | Weights | Time 1 | Course 1 | Effect | Time 2 | Course 2 | Effect | Time 3 |
|  | Listening | 0.47 | Strong Treatment | rise | 0.55 | Moderate Treatment | rise | 0.66 |
|  | Writing | 0.33 | Strong Treatment | rise | 0.40 | No Treatment | drop | 0.00 |
|  | Reading | 0.40 | No Treatment | drop | 0.24 | Strong Treatment | rise | 0.50 |

Table 13.13 compares the results of exploratory analysis with respect to the values of the loadings and weights in the outward and inward mode models respectively. Table 13.13 summarizes the effects of the Course and Treatment on Proficiency from Time 1 to Time 2 and from Time 2 to Time 3 in the outward mode (reflecting with loadings) and inward mode (forming with weights). It can be seen clearly from Table 13.13 that the effects of treatment can rise or fall under both types of model in which the outward mode maximizes reliability of the combined scores, while the inward mode maximizes the explanation of the combined scores.

## The Effect of Treatment on Proficiency in the Outward Mode

Table 13.13 also shows that the treatment has effects on Listening and Writing from Time 1 to Time 2 as is indicated by the rise in values of the loadings from 0.81 to 0.84 for Listening and 0.83 and 0.85 for Writing. However, there is a drop in the value of loadings for Reading from Time 1 to Time 2 of 0.06 (from 0.84 to 0.78). Among the three skills, the treatment provides most effect on Listening between Time 1 and Time 2. The result indicates that the availability of Course 1 that is conducted between Time 1 and Time 2 is important. Between Time 1 and Time 2 the emphasis of instruction is on the development of writing skills through
(a) an explanation of grammatical structures, and
(b) an increase in vocabulary involving lexical skills;

In addition, opportunities provided for the development of the skills of listening through practice in a language laboratory appear to have effects on the contribution of Listening scores to the Proficiency scores after the effects of Reading and Writing are taken into consideration. The effects of courses in the outward mode are drawn graphically in Figure 13.7.


Figure 13.7 The Effects of the Courses in the Outward Mode

Interestingly, the treatment has more effect on Reading from Time 2 to Time 3 as is indicated by the rise of the value of loadings from 0.78 to 0.82 . Although there is an increase in the value of loadings for Listening between Time 2 and Time 3, the effect is small. The loading of Writing drops from 0.85 to 0.81 between Time 2 to Time 3 . Among the three skills, namely Listening, Writing and Reading, Reading has the biggest effective change in rising from 0.78 to 0.82 between Time 2 and Time 3 . This indicates that the emphasis of the course from Time 2 to Time 3 is on Reading. This suggests that among other skills, students may have more attention paid to Reading in Course 2 than to the other skills. Alternatively, the time spent between T2 and T 3 differs between students and some students who take longer time occasions of testing may profit from textbooks in English as well as other materials written in English.

## The Effect of Treatment on Proficiency in the Inward Mode

Table 13.13 records that there is an increase in the value of the weights for Listening from 0.47 to 0.55 from Time 1 to Time 2. The value of the weights for Writing also increases by 0.07 . However, the weights for Reading drop from 0.40 to 0.24 between Time 1 and Time 2. The results show that among other skills, Listening has the biggest gain in weight of 0.08 . This indicates that the treatment has more effect on Listening than other skills in the inward mode. Figure 13.8 depicts the effects of courses in the inward mode.


Figure 13.8 The Effects of Courses in the Inward Mode
Between Time 2 and Time 3, Reading has the largest gain in weight compared to the other skills. The weight increases from 0.24 to 0.50 for Reading. There is also an increase in the value of the weight for Listening of 0.11 , but not as much as for

Reading of 0.26 . Surprisingly, the value of the weight drops from 0.40 to 0.00 for Writing between Time 2 and Time 3. While Reading has the biggest gain in weights, which is consistent with the emphasis of the course from Time 2 to Time 3 on Reading, the reasons underlying the fall in the contribution of Writing to the English Language Proficiency can possibly be explained from the results of the interviews with lecturers of English and the Focus Group Discussion (FGD) with students, and are discussed in Chapters 9, 10, and 11.

## Summary

In this chapter, interrelationships among nine variables that measure performances, namely LISTEN_1, WRITE_1, READ_1, LISTEN_2, WRITE_2, READ_2, LISTEN_3, WRITE_3, and READ_3 are reported. Results for the outer and inner models are discussed. The numerals 1,2 , and 3 in these latent variables represent Time 1, Time 2, and Time 3. The results presented in Tables 13.3 and 13.4 indicate that there are significant correlations between the nine variables from Time 1, Time 2, to Time 3 with respect to the significance of the correlation coefficients as is discussed in Chapter 12 on p. 279. Cohen (1992, p. 157) suggested the following guidelines for indicating the relative sizes of correlation coefficients:

$$
\begin{aligned}
& \mathrm{r}=0.10 \text { to } 0.29 \text { or } \mathrm{r}=-0.10 \text { to }-0.29 \text { small } \\
& \mathrm{r}=0.30 \text { to } 0.49 \text { or } \mathrm{r}=-0.30 \text { to }-0.49 \text { medium } \\
& \mathrm{r}=0.50 \text { to } 1.00 \text { or } \mathrm{r}=-0.50 \text { to }-1.00 \text { large }
\end{aligned}
$$

The results of the analyses indicate that there is the influence of prior performance on later performance from Time 1 to Time 2, and on the influence of prior performance on later performance from Time 2 to Time 3. For example, students who have good scores in LISTEN_1 are more likely to perform better in LISTEN_2. Students who are good performers in LISTEN_2 are more likely to be good performers in LISTEN_3. Moreover, the better students perform in WRITE_1, the better students perform in WRITE_2. In other words, students who do not perform well in WRITE_1 are less likely to have good performance in WRITE_2. Students who have good scores in WRITE_2 are more likely to be good achievers in WRITE_3. In addition to listening and writing, students who achieve high scores in READ_1 are more likely to achieve high scores in READ_2. Students who perform better in READ_2 are more likely to be good performers in READ_3. However, the magnitudes of these relationships decrease over time.

Table 13.3 and Table 13.4 show that there are two medium path coefficients between LISTEN_1 and LISTEN_2 (0.34), from WRITE_1 to WRITE_2 (0.29) and a small path coefficient from READ_1 to READ_2 (0.22). The largest value from LISTEN_1 to LISTEN_2 indicates the effect of instruction provided in the language laboratory helps student to improve performance in listening comprehension. Moreover, this result indicates that the availability of Course 1 provided between Time 1 and Time 2 clearly has a beneficial effect on student performance.

There are also medium path coefficients for language skills between performances in Time 2 and Time 3, for example, from LISTEN_2 to LISTEN_3 (0.26), and a small path coefficient from WRITE_2 to WRITE_3 (0.21) and a very small path coefficient between READ_2 and READ_3 (0.15). However, the effect of Course 2 (English 2) occurring between Time 2 and Time 3 on the improved scores of Listening, Writing, and Reading, cannot be ignored. These values can be compared with the low values of listening, writing and reading at Time 1 . This suggests that the availability of Course 2 that is conducted between Time 2 and Time 3 is important since this helps improve student performance in English Language Proficiency.

Moreover, as a consequence of conducting Course 2, which emphasizes reading comprehension between Time 2 and Time 3, improved reading scores are expected. Interestingly, the results show that the direct effect from READ_2 to READ_3 at Time 3 ( $\beta=0.15$ ) is lower than the magnitude of the direct effect of READ_1 to READ_2 at Time $2(\beta=0.22)$. The results suggest that the instruction in Course 2 has had positive effects on students' performance at the lower score levels.

Three additional analyses are carried out. The first two analyses involve examining a model of English language proficiency both in the inward mode and in the outward mode. This analysis is important to model whether English language proficiency is formed or reflected by its manifest variates. The results show that a model of English language proficiency is better reflected by its indicators: listening, reading, and writing.

The last analysis is about the effect of treatment (Courses) on English proficiency. The results indicate that Course 1 that is conducted between Time 1 (PRETEST) and Time 2 (NOSTIC) has more effect on Listening and Writing in the outward mode,
while Course 2 that is conducted between Time 2 and Time 3 has more effect on Reading in the outward mode. In the inward mode, Course 1 has greater positive effect on Listening, while Course 2 has greater positive effect on Reading.

After the discussion of the results of exploratory analyses using the PLSPATH computer program in this chapter, it is of some importance to examine the data available using AMOS graphics that is more confirmatory in nature than exploratory. However, results in this chapter have shown that PLSPATH analyses are a necessary step in the exploration of the available data in order to identify relationships warranting further investigation in subsequent parts of this study. Therefore, it seems essential to test these relationships with more rigorous maximum likelihood estimation procedures rather than more exploratory partial least squares regression analytical procedure. The results are discussed in the chapter that follows.

## CHAPTER 14 MEASURING ENGLISH FOREIGN LANGUAGE PROFICIENCY AS SEPARATE ENTITIES

## Introduction

In Chapter 13 the use of PLSPATH as an exploratory procedure for examining the modelling of English language proficiency is discussed. However, this aspect of this investigation is not complete without an examination of the model of English Language Proficiency in a confirmatory analysis. An appropriate program for conducting a confirmatory analysis is AMOS 18.0 (Arbuckle, 1999). AMOS Graphics (Analysis of Moment Structures) is a Structural Equation Modelling (SEM) program that provides a graphical tool for drawing and testing a complex model.

Similar to PLSPATH, AMOS is able to produce two distinct sub-models, namely the outer or measurement part of the model and the inner or structural part of the model. Thus the measurement part of the model (the measurement or outer model) involves consideration of the indicators or manifest variates that best reflect the latent variables. However, in AMOS the measurement model only involves reflection in the outward mode. The structural part of the model (structural or inner model) involves the development and examination of relationships about how the set of latent variables are related to each other. The terms 'measurement model' and 'structural model' used in SEM model specification are equivalent to the 'outer' and 'inner' model terms respectively that are introduced in the previous discussion of the PLSPATH model. Although both PLSPATH and AMOS are estimation methods for path analysis with latent variables indirectly observed by multiple variates, these two statistical methods have substantial and important differences.

## PLSPATH compared to AMOS

Both PLSPATH and AMOS are computer software programs that can be used to examine model strength or validity. PLSPATH is referred to as Partial Least Squares Path Modelling, while the Analysis of Moment Structures program (AMOS) is referred to as a Structural Equation Modelling (SEM) program. Traditionally,

PLSPATH is more exploratory in nature while AMOS is essentially confirmatory in nature. AMOS uses the maximum likelihood method of estimation, while PLSPATH uses the partial least squares estimation method. There are also substantial differences between these two methods in terms of optimization criteria, the data, scale of models, generalization and underlying assumptions. AMOS is parameteroriented that aims at high accuracy in the estimation of the parameters, while PLSPATH is explanatory-oriented that aims at high accuracy in the explanatory power of the paths. Moreover, manifest variates (observed variables) in PLSPATH are weighted in order to maximise variance explained, while Kline (2011, p. 287) noted that "in contrast, the goal of SEM is to minimise residual covariances which may not directly maximise the prediction of outcome variables". Maximizing the amount of variance explained also minimizes the magnitudes of the residual paths in the models.

AMOS is more appropriately used in the analysis of smaller models with a relatively small number of variables where separate parameters have operative use and the model is built on strong theoretical ground. In contrast, PLSPATH is more suitable for larger and more complex models that emphasize the power of explanation and prediction when strong theory is not as well developed. AMOS is typically limited in the number of latent variable and some observed variables in the inner model, while in PLSPATH only the power of the computer restricts the size of the model and the number of parameters involved. Furthermore, PLSPATH can be employed with a relatively small number of cases, being involved in the analyses of a simple model, while AMOS requires a substantial number of cases.

Kline (2011, p. 287) argued that "the limited-information estimation methods in PLSPATH make fewer demands of the data". There is no assumption of a particular distributional form, and the estimation process is not as complex. Consequently, PLSPATH is able to handle both smaller and larger samples than SEM, and there are generally no problems concerning inadmissible solutions. This makes the analysis of complex models with many indicators substantially easier in PLSPATH than in structural equation modelling with the AMOS computer program.

Furthermore, AMOS is only able to handle continuous data while PLSPATH is able to handle both continuous and categorical data. Moreover, AMOS is only able to
examine a model with latent variables that are formed in the outward mode, but PLSPATH is able to examine models with latent variables that are constructed in three different modes, namely the outward, the unity and the inward modes but without the strict identification requirements involved in SEM for estimating latent composites (Chin, 1998). In general, PLSPATH is not able to generate model fit statistics of the kind available in SEM, instead investigators evaluate models in PLSPATH by estimating the values of factor loadings, path coefficients, and variance explained ( $\mathrm{R}^{2}$-type) statistics for outcome variables. Owing to the different characteristics possessed by these two methods of estimation and analysis, one is more appropriate than the other under specific circumstances. This indicates that one method is not always suitable for use with certain characteristics of the data. Thus, it is the researchers' responsibility to specify or identify which method can be argued to produce the most appropriate estimates of parameters in the analysis of the data in a particular situation.

Some research workers in the area of statistical analysis may argue for the use of the AMOS program only, since PLSPATH involves older statistical software. This issue can be misleading. In determining which computer packages can be best used to analyse data, by arguing in terms of the age and superficial characteristics of the computer applications and whether old or new software are involved, unfortunately, does not lead to a single meaningful or most coherent answer. However, investigators have to understand the causal and structural relationships in the data under consideration before deciding which is the better or best statistical procedure that needs to be employed. Moreover, since some of the data in the datasets are categorical in nature, this may require that PLSPATH needs to be used. At the same time investigators have to consider that since some of the data in the datasets are continuous, it is also preferable to employ the AMOS computer package that uses the maximum likelihood estimation procedure.

Furthermore, it is important to examine where possible the relationships between the manifest variates and their latent constructs as well as the causal relationships between independent latent variables and other dependent latent variables using the more rigorous maximum likelihood estimation procedure rather than the use of the more exploratory partial least squares regression analytical procedure. In addition, in this study the effects of treatment on English Language Proficiency need to be
examined. Thus, following the exploratory analysis discussed in the previous chapter using the PLSPATH analysis program, it is appropriate to reanalyse the path model using a confirmatory analysis strategy.

This chapter discusses the results of the confirmatory analyses using AMOS 18.0 (Arbuckle, 2009). In this chapter and the chapter that follows maximum likelihood procedures of analysis are employed to follow up the exploratory analyses undertaken initially with the PLSPATH program in Chapter 13. This confirmatory approach employs Structural Equation Modelling (SEM) with the AMOS 18.0 computer program in order to examine a model where latent variables involve outward modes and to re-examine the relationships recorded and discussed in the previous chapters. Thus, the SEM analysis is planned to confirm the outward mode model tested previously using the PLSPATH estimation procedures. The findings that are obtained present the results of the SEM analysis that assesses statistically the strength of the specified model as well as yielding strong estimates of the parameters of the model. However, the maximum likelihood strategy employed in an AMOS analysis is said to be robust with respect to departures from normality (Arbuckle, 1992), and the estimation procedures employed are also able to produce sound goodness of fit statistics (Arbuckle, 1999).

To this end a confirmatory approach using the Analysis of Moment Structures (AMOS) program is employed because under certain conditions this approach is expected to produce stronger estimates than those obtained with the PLSPATH program. However, AMOS requires that the variates involved in the path model are continuous but are not necessarily normally distributed and the data employed in the analyses presented in this chapter satisfy these requirements.

## SEM and its Family History

SEM (Structural Equation Modelling) is not a single technique; rather it is a collection of related techniques. There have been a number of different labels under the umbrella of SEM including path modelling, causal model analysis, analysis of covariance structures or causal modelling, structural equation analysis, and latent variable analysis of structural equations. Sometimes, these terms refer to some computer programs such as Linear Structural Relationships (LISREL), Analysis of

Moment Structures (AMOS) and Latent Variable Analysis as an umbrella term for a statistical technique that can be used to replace other more conventional or older analytical strategies.

The roots of SEM go back to the early twentieth century (Kline, 2011; Maruyama, 1998) when Charles Spearman (1904) developed exploratory factor analysis. A few years later Sewell Wright (1918), a biogeneticist, developed the basics of path analysis. In his early work, Wright $(1921,1934)$ was able to demonstrate the relationships between observed covariances and parameters of a model that represented direct and indirect causal effects among a set of variable, and these effects could be estimated from sample data. With this innovation, Wright was able to draw path diagrams that represented direct and indirect effects. In the 1960s, Blalock (1964) and Duncan (1966), and others introduced path analysis and used it to address issues in the social sciences, while Peaker (1971) and Keeves (1972) were among these who first introduced path analysis to analyse data in the field of education. The use of the ideas of: (a) minimizing the variance explained by Snedecor and Cochran, 1967, p. 147), (b) partial least squares by Wald (1982), and maximum likelihood principles by Fisher (1925).

In line with the advances in computers and computer applications, the term 'causal modelling' was introduced. When some social scientists objected to the use of the term 'causal' with non-experimental data, another term that was less controversial, but very descriptive, namely 'structural equation' was employed to replace the term 'causal'. The correlations between variables in these approaches are defined by a series of equations that describe hypothesized structures or relationships, giving rise to structural equation analysis or structural equation modelling. An example of a hypothesized causal structure is illustrated in Figure 14.1.


Figure 14.1 An Example of Causal Structure
Figure 14.1 depicts that Parent Socio-economic Status is identified as Variable 1, School Achievement is considered as Variable 2 and the Skill Level and Type of Job
is identified as Variable 3. It is hypothesised in Figure 14.1 that Variable 1 (Socioeconomic Status of the Parent) influences Variable 2 (Student School Achievement), which in turn influences Variable 3 (Skill level and Type of Job). Variable 1 has a direct effect on Variable 2 as well as an indirect effect on Variable 3. The indirect effect of Variable 1 on Variable 3 is mediated by Variable 2. Consequently, in path analysis the relationship between Variable 1 and Variable 3 is the product of the relationships between Variable 1 and Variable 2 and between Variable 2 and Variable 3. These relationships are expressed as path coefficients and are commonly estimated as standardized regression coefficients.

## Theoretical Issues Addressed Using the AMOS Computer Program

Two issues arise in the analyses of the data in this study in which the AMOS computer program is used. The first issue is concerned with whether the three aspects of language skill that are involved in the assessment of English language proficiency performance, namely the skills of Listening, Writing and Reading, operate as separate entities, and are developed as such through the English I and English 2 courses that are conducted within the University. Moreover, it is possible to correlate the residual effects between similar manifest variates, thus providing for the effects of correlated measurement errors associated with the manifest variates.

A second or alternative issue is concerned with whether the three skills of Listening, Writing, and Reading interact at all stages in the development of English Language Proficiency performance, in such a way that only one entity can be considered to operate during the instruction provided in the English 1 and English 2 courses. This second issue is addressed in Chapter 15.

In this chapter the former issue is considered, and a model that involves nine observed or manifest variates are presented in Figure 14.2 for the causal modelling of relationships between them. This analysis is conceptually equivalent to the simple regression analysis undertaken with the nine variables in Chapter 13 where least squares regression procedures are employed (see Figure 13.3). However in this chapter maximum likelihood analysis is employed in the estimation of the parameters of the model.

## The Ideas Involved in the Nine variable Model

The main research question in this chapter is: 'Is English Foreign Language Proficiency better considered and taught as separate skills'?


Figure 14.2 The Hypothesised Nine Variable Model

The model depicted in Figure 14.2 is relatively complex. The ideas involved in constructing the nine variable model derive from the exploration of a large number of models and after many trial and error runs. A model with specific latent constructs and their multiple indicators is examined and is discussed in Chapter 15. If the results of analysis show that the model is not a good fitting model, an investigation needs to be conducted to detect the source of mis-specification. The Modification Indices generated by the AMOS program show that there are regression paths among the multiple indicators or skills variables involving different constructs. However, correlations between observed variables cannot be estimated if there are some latent constructs in a model. If the correlations between the variables are considered, this changes the meaning of the construct. This also indicates that a certain model is not only influenced by its multiple variables, but it is also influenced by something else. Arising from this situation, there is the idea of constructing a model with observed
variables only. Since there are nine observed variables in the dataset, a model is constructed employing a path analysis approach. Moreover, the model in Figure 14.2 serves to validate but not to verify the model analysed using PLSPATH that is constructed in unity mode and discussed in Chapter 13.

## Path Analysis with Observed Variables

Although Path Analysis (PA) is considered as the oldest member of the SEM family, it must involve a necessarily valid argument (Kline, 2011). MacCallum and Austin (2000) reviewed roughly 500 articles in the social and behavioural sciences and found that 25 per cent of the 500 articles used Path Analysis. Therefore, it is clear that Path Analysis was being widely used in the latter decades of the twentieth century, in spite of criticism of its use, to examine hypothesized causal relationships.

Causal modelling is a term or an expression that was first associated with the Structural Equation Model (SEM) technique of path analysis, and the model presented in Figure 14.2 can meaningfully be called a causal path model. This is because there are causes and effects, and causality goes in a single direction without feedback or loops that circle back on themselves. This particular model involves the hypothesizing of causal relationships among directly observed variables. In the SEM literature, such a situation involving a recursive path analysis is a unidirectional causal flow model in which some of the dependent variables affect other dependent variables. Thus, path analysis is used in this chapter to examine theoretical models that specify causal relationships between the variables.
Schumacker and Lomax (1996, p. 39) hypothesized the causal relationships among the variables of a model that can be analysed using structural equation modelling when:
(a) temporal ordering of variables exists;
(b) covariation or correlation is present among variables;
(c) other causes are controlled for; and
(d) variables are measured on at least an interval scale or level.

In addition, a case must be argued on logical or experiential grounds for the operation of the causal relationships that are hypothesized in the model.

In Figure 14.2 the diagram of a complex path model is presented for testing over times of identifiable periods since the data are gathered on three different occasions.

This model assesses the changes in variables that occur under the hypothesized effects of causation. Thus, the path model is a structural model without manifest (observed) variates forming latent variables. Moreover, the structural model involves hypotheses about the effects of causal relationships, and the path model of Figure 14.2 represents hypotheses associated with correlated causes. In this case, it is hypothesized that the three independent variables, namely Listen1, Write 1 and Read1 are causes of Listen2, Write2 and Read2 one by one respectively. Moreover, the three dependent variables, namely Listen2, Write 2 and Write 2 are hypothesized to be causes of the three dependent variables, namely Listen3, Write3 and Read3 respectively.

In this model, the variables of Listen1, Write 1 and Read1 operating at Time 1 are exogenous, and these exogenous variables covary (as is indicated by the curved line with two arrowheads). However, the model provides no explanation of why these exogenous variables covary. The covariance symbol represents an unanalysed association that connects the boxes for the three measured exogenous variables. The covariance symbol also represents the assumptions that the three exogenous variables are free to, respectively, vary and covary, but for reasons that are unknown, in terms of the model. However, one assumption in path analysis contends that measured exogenous variables are assumed to covary because of measurement error, so that the covariance symbol routinely connects every pair of such variables in the structural model.

The variables of Listen2, Write 2 and Read2, operating at Time 2 are not only endogenous, but are also variables that mediate between Time 1 and Time 3 when the outcome variables of Listen3, Write3 and Read3 are assessed at the completion of the courses in English 1 and English 2 prior to graduation. Consequently, the endogenous variables at Time 2 have a dual role, both as independent and dependent variables. An important feature of the use of the AMOS program is its capacity to estimate the covariances in terms of the correlations that exist between the observed measures as are indicated by the bedirectional curved paths that are included in Figure 14.2.

Figure 14.2 shows that since the variables of Listen1, Write1 and Read1 operating at Time 1 are exogenous, these constructs do not have any single-headed arrows
pointing to them. Moreover, Hatcher (1994, p. 155) argued that in general, only exogenous variables are allowed to have covariances, while endogenous variables are never allowed to have covariances with any other variables However, residual terms must be identified for each endogenous variable in the model, but not for exogenous variables. Since there are six endogenous variables in the model, namely Listen2, Write2, Read2, Listen3, Write3 and Read3, there are six residual terms in the model. In some studies, the residual term is sometimes referred to as the error term. In this study, residual terms are represented by the letter e (for Error term) and follow Bentler's (1989) conventions.

The path that points from the residual term (e4) to the endogenous variables in Figure 14.2 represents the direct effect of all the unmeasured causes on the endogenous variable (for example: - e4 $\longrightarrow$ Listen2). The numeral (1) that appears in the figure next to this path is a scaling constant that indicates the assignment of a scale value to the residual term (Kline, 2011). This scaling constant is necessary because residual terms are latent, and latent variables need scale values before the computer can estimate relationships associated with them. A scaling constant for a residual term is also referred to as an unstandardized residual path coefficient.

Hatcher (1994, p. 156) argued that "the residual term for a variable represents all the factors that influence variability in the variable, but are not included as antecedent variables in the model". Antecedent variables can be referred to as independent variables. For example, the path diagram in Figure 14.1 indicates that Listen2 is influenced by Listen1, Write1 and Read1. However, it is highly unlikely that these three antecedent variables account for 100 per cent of the variability in Listen2. Listen2 is also expected to be influenced by a residual term (e4). James, Mulaik and Brett (1982) argued that causal effects may be represented by this residual term on the dependent variables because of omitted independent variables, random noise, or specification errors in the equation.

The six endogenous variables are considered to be influenced by six error terms that are interrelated as are depicted in Figure 14.2. The AMOS program also provides information in the form of Modification Indices that indicate whether it is appropriate to test the strength of these relationships prior to their inclusion in the
model that is estimated. The model depicted in Figure 14.2 is constructed for the examination of the effects of the English 1 and English 2 courses. Further consideration is given to the operation of the AMOS program after discussion of the second issue raised above and addressed in Chapter 15.

The second issue raised above (see section theoretical issues addressed on p. 343) involves the desirability of examining a more complex structural model in which latent variables are formed from the three manifest variates. A brief overview concerned with a model to address this second issue is given below. This starts by explaining how the model is refined.

## Re-examining (Refining) Path Models with Latent (Unobserved) Variables

Kline (1998) noted that structural equation modelling required that certain conditions must be met in order to identify statistically a theoretically specified model. In addition, Kline (1998) stated that 'statistical identification' referred to the ability to find unique solutions for each parameter to be estimated in a theoretical model. The specified model was said to be 'under-identified' when convergence in the estimation procedure would not take place and unique values could not be found for each parameter to be estimated. Kline (1998) added that to facilitate statistical identification, reflective indicators or manifest variates needed to be used and each latent variable needed to be related to a minimum of two manifest variates.

Latent variables can be either exogenous or endogenous variables and it is necessary to consider about what observable variates best represent the latent variables. Thus, in confirmatory analysis using AMOS, it is necessary to identify multiple indicators to represent adequately the various facets of each latent variable. This is because it cannot be argued that the measurement error of a latent variable is adequately reflected by only one reflective indicator. These requirements are consistent with other structural equation modelling programs, such as LISREL, and the meeting of these requirements is found to be necessary for the development of an admissible solution in AMOS 18.0 when complex models that contain both measurement and structural sub-models are involved.

The model to address this measurement issue is diagrammatically presented in Figure 14.3.


Figure 14.3 Hypothesized Model of English Language Proficiency for Further Analysis with AMOS (Reflective Mode)

Figure 14.3 depicts that there are three latent variables, namely PRETEST, NOSTIC and ELPT which are operating on three different occasions, namely Time 1, Time 2 and Time 3 respectively. Since there are two courses, namely English 1 and English 2 provided by the University, this model can be employed to examine the effects of the English 1 and English 2 courses that each operates between PRETEST and NOSTIC (between Time 1 and Time 2) and from NOSTIC and ELPT (from Time 2 and Time 3) respectively. However, a more complete discussion concerning this issue is given in Chapter 15. The nine manifest variates incorporated into the model in Figure 14.3 are considered to address the second issues associated with measurement on the three occasions.

## Forming and Testing Path Models with Latent (Unobserved) Variables

It is considered important to provide further discussion concerning this model that is associated with the second issue. Figure 14.3 depicts the hypothesized model of English Language Proficiency for further analysis with AMOS and this model is examined with a sample of 1978 cases. However, the clustering of the students within each faculty or each class is ignored in the design of the sample and the model that is advanced for confirmation can only be examined at the student level with the situation of the nesting of the data ignored. The model depicted in Figure 14.3 has a different nature from the model illustrated in Figure 14.2. The model in Figure 14.2
involves only observed variables, while the model in Figure 14.3 is constructed to involve a latent variable path model and the manifest variates discussed in Chapter 15.

In the hypothesised model, as is shown in Figure 14.3, one path from each latent variable to the associated manifest variates is fixed to 1.0 (unity) for scaling purposes in order to provide appropriately for the estimation of the variances and covariances. This is a requirement of the AMOS program in order that the program is able to operate effectively and it is done automatically by the program to the first drawn reflected variates for each latent variable. However, an alternative method of doing this is to select what is referred to as a 'reference variate' for each latent variable and to fix the factor loading for this reference variate to unity (1). Thus, it is necessary to decide which measure or variates best describes the construct although this is not essential. However, the AMOS analysis computer programs apparently provide different estimates when a reference variable is fixed for a different reflective variate. The differences are in the unstandardised or metric regression weight estimates and not in the standardised regression weight estimates. This provides opportunities to select the model that best explains the estimates since the impact of measurement error on each of the manifest variates can also be estimated. However, another variate that is not fixed to unity (1) may produce a larger estimated weight than the weight of the variate that is fixed to unity (1).

In Figure 14.3, the hypothesised model indicates that there are three unobserved or latent variables and nine observed or manifest variates in the model. All the path parameters between variables in the model are initially specified. In order that the model can be identified, the AMOS program automatically places constraints such as 0 or 1 for the error variances of regression weights and residuals. Thus, placing a loading with a scale value of 1 that is associated with each manifest variate specifies the metric associated with each latent variable. Arbuckle (1999) argued that although such constraints did not affect the standardised results in different analyses, they did affect the unstandardised estimated values. Kline (1998) added that the unstandardised estimates were reported and were useful when making cross-group or cross-model comparisons, while the standardised estimates were more useful for making comparisons within a single model. Consequently, in reporting the results of the computer analyses in both Chapter 14 and Chapter 15 the estimated
unstandardized or metric regression coefficients (b) are presented first, with their estimated standard errors (se) given in parentheses, and are followed by the corresponding standardized regression coefficients $(\beta)$ and where appropriate correlation coefficients (r). The section that follows discusses model specification and identification for path models with observed variables to address the first issue raised earlier in this chapter.

## Specifying and Identifying Path Models with Observed Variates

## Specification

This section describes the model specification for the nine manifest (observed) variates as is depicted in Figure 14.2. Model specification involves the representation of the researchers' hypotheses in the form of a structural equation model (Kline, 2011). The process of specification begins by drawing a model using a set of standard graphical symbols provided by the AMOS graphics program. However, the model can also be described by a series of equations. Specification is considered to be an essential step in stating a structural equation model (Kline, 2011).

Since in the use of AMOS it is planned to re-examine the relationships between earlier observed variates and the later observed variates, as well as the effects of the treatment provided in the course, the set of manifest (observed) variates listed in Table 14.1 is used as the theoretical starting point in specifying the model for examination.

The results of the PLSPATH analysis in the outward mode discussed in Chapter 13 provide an appraisal of all manifest (observed) variates used within the model of English Language Proficiency.

Table 14.1 Manifest (observed) Variates Included within the AMOS Path Model Compared with the PLSPATH Path Model

| Manifest Variate (MV) |  |  | PLSPATH | AMOS | Mode |  | Error Effects |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Occasion | Acronym | Description |  |  | PLSPATH | AMOS | AMOS |
| Time 1 | Listen1 | Score of Listening at Time 1 | * | * | Outward or | Outward | e1 |
|  | Write1 | Score of Writing at Time 1 | $\stackrel{*}{*}$ | * | Inward |  | e2 |
|  | Read1 | Score of Reading at Time 1 | * | $\stackrel{*}{*}$ |  |  | e3 |
| Time2 | Listen2 | Score of Listening at Time 2 | * | * | Outward or | Outward | e4 |
|  | Write2 | Score of Writing at Time 2 | * | * | Inward |  | e5 |
|  | Read2 | Score of Reading at Time 2 | $\stackrel{*}{*}$ | $\stackrel{ }{*}$ |  |  | e6 |
| Time 3 | Listen3 | Score of Listening at Time 3 | * | * | Outward or | Outward | e7 |
|  | Write3 | Score of Writing at Time 3 | * | $\stackrel{ }{*}$ | Inward |  | e8 |
|  | Read3 | Score of Reading at Time 3 | $\stackrel{*}{*}$ | $\stackrel{+}{*}$ |  |  | e9 |

## Identification

There is a problem that arises in an analysis of a structural equation model. This is because the analysis of a structural equation model cannot necessarily result in a good fitting model. This frequently raises a potential problem that complicates the analysis that is referred to as 'identification'. Kline (2011, p. 93) stated that "a model is identified if it is theoretically possible for the computer to derive a unique estimate of every model parameter." Otherwise, the model is said to be 'not identified'. Although the model is diagrammatically drawn using the data available, the word 'theoretically' relates to the model, and not to the data. If the results of the analyses show that the model is not identified, the model needs to be respecified and this means that the researcher needs to return to step 1 involving 'specification'.

Path coefficients as parameter estimates are meaningful only if they are obtained from the estimation of an identified model. A model may be said to be identified either by being 'just-identified' or 'over-identified'. Hatcher (1994) and Maruyama (1998) argued that a 'just-identified' model was one that had exactly as many linearly independent equations as unknown parameters to be estimated. In the path analysis and SEM literatures, a 'just-identified' model was sometimes referred to as a 'saturated model'. Figure 14.3 describes a just-identified model which has 45 paths to be estimated and has enough information involving 45 correlations to yield 45 equations. The advantage of a just-identified model is that it permits the estimation of just one unique set of parameters. However, a just-identified model does not provide any tests for goodness of fit. This is because a just-identified model always results in a perfect fit to the data. The reason is that the data that are analysed in path analysis consist simply of a correlation matrix or a so called 'variance-covariance' matrix. Every variable is predicted to be related to every other variable in some way. A model which has more unknowns than equations is a model in which there are too many parameters to be estimated for the number of equations available. Such a model is referred to as 'under-identified' models. This is because this model does not have enough information available to estimate uniquely the parameters regardless of the approach employed. For example, in Figure 14.2 if a possible path were added from Listen 3 back to Listen2, then the model would have too many unknowns and not be uniquely solvable (Maruyama, 1998).

Finally, a model which has fewer unknowns than equations is called an 'overidentified' model. This is because the equations hold enough information to produce more estimates than parameters.

## Parameter Estimation

Once the model has been specified and identified, the next step involves calculating estimates for the model parameters. This step is conducted by employing a computer program such as AMOS and the maximum likelihood (ML) procedure provides a method that is used to estimate parameters. Kline (2011, p. 157) pointed out that

Computer implementations of ML are typically iterative, which means that the computer derives an initial solution and then attempts to improve these estimates through subsequent cycles of calculation. 'Improvement' means that the overall fit of the model to the data gradually improves.

Iterative estimation can be successful or unsuccessful. There is a warning issued by the computer program if the iterative estimation is unsuccessful. Consequently, the researcher has little confidence in the final set of estimates derived from the analyses.

Table 14.1 records the information that manifest variates included within the PLSPATH outward mode path model and the AMOS path model are similar, although, AMOS is only able to examine the latent variable model in the outward mode. All possible paths between observed variates are initially included in the model. Thus, all possible paths are initially analysed and the non-significant paths are then trimmed from the model one at a time until an adequately fitting and coherent model is obtained. This means that the final model is fitted to the data by taking into account not only empirical considerations but also theoretical considerations. In general where the critical ratio ( t ) value of a path coefficient is less than 2.00 for an unstandardized regression weight, the path is considered to be statistically nonsignificant and is commonly removed from the path model. Ideally, all parameter estimates need to be in the hypothesised direction and statistically different from zero (that is, the critical ratio is larger than $\pm 1.96$, at the $\alpha=0.05$ significance level) and approximately to be $\pm 2.00$. However, this also depends on the purpose for which the researcher is examining the model. If the critical ratio ( t ) value of a path is less than 1.96, the path is only removed or not removed from the model after considering the research questions being advanced. For example, if the aim of the analyses involves looking for an estimation of the effects of a treatment or course on language
proficiency, it may be necessary not to remove a path with a critical ratio value of less than 1.96.

Careful consideration is required before making the decision to remove or to retain a parameter of the model. It is also desirable to examine more than one model until the model with the best estimates is obtained before deciding to identify the final best fitting model. Moreover, it is necessary to consider the theoretical rationale for each of the estimated parameters. If strong theory or prior findings suggest that a parameter is meaningful and coherent in a model, then consideration must be given to retaining such non-significant parameters. A non-significant result may still be an interesting finding that needs to be reported and discussed.

In this study, at the first stage in the analysis, the critical ratio value is set at 1.96 . However, the associated path is not necessarily removed from the model because there is an interest in examining the effects of the treatment or of a course on language proficiency. This is because if a non-significant path is removed from the model, there is no guarantee that the model is the best fitting model. By considering the use of modification indices, the removal of some paths may either increase or even reduce the critical ratio values of other paths that are less than 1.96 to become bigger or smaller. However, if all critical ratios ( t ) in a model are greater than 1.96 then all regression estimates are significantly different from zero and need to remain in the model.

## The Results of the Hypothesized Nine Observed Variable Model Analysis

The result of the AMOS analysis is basically similar to the result of PLSPATH analysis as is presented in Figure 14.3. The results of the PLSPATH analysis in unity mode are discussed in Chapter 13.

This section deals only with a causal model in which all measures are manifest (observed) variates. Furthermore, this section does not deal with a path model that specifies causal relationships between latent (unobserved) variables and between the latent variables and their manifest variates. After the model is specified and identified, the model (Figure 14.1) is examined and the parameters of the model are estimated using the AMOS program and are recorded in Table 14.2.


Figure 14.4 The PLSPATH Nine Variable Model (only significant path coefficients are recorded)

## Initial Results

The path model in Figure 14.3 represents the hypothesis that there are interrelationships between variables operating at Time 1, Time 2 and Time 3. Figure 14.4 presents the results of the hypothesised nine variables model analysis from the PLSPATH analyses. Figure 14.4 presents the interrelationships between the nine variables on the three different occasions. The Figure shows that some variables operating at Time 1 influence some variables operating at Time 2 and Time 3. Similarly, some variables operating at Time 2 influence some variables operating at Time 3. However, there are some variables operating at Time 1 and Time 2 that do not have significant effects on the other variables at Time 3 .


Figure 14.5 The Model of the Interrelationship between Nine Variables on Three Different Occasions.

Note to figure required for $\underline{b}$ (se) $\underline{\beta}$
$b=$ metric regression coefficient or unstandardized regression coefficient (se)= standard error
$\beta=$ Standardized regression coefficient

Table 14.2 records that the variables that have critical ratio ( t ) values less than $\pm 1.96$ and that are estimated to be not significantly different from zero and can be removed from the model. Consequently, these variables need to be removed from the model. There are seven possible relationships in the model illustrated in Figure 14.5 for which the regression path estimates are not significantly different from zero and can be dropped from the model. These variables are Write2 to Listen3 ( $\mathrm{t}=0.487$ ), between Write1 and Listen3 ( $\mathrm{t}=1.683$ ), from Listen1 to Write3 ( $\mathrm{t}=-.054$ ), from Write1 to Read3 ( $\mathrm{t}=1.410$ ), between Listen1 and Read3 ( $\mathrm{t}=0.944$ ), from Read1 to Write3 $(\mathrm{t}=1.560)$ and between Listen2 and Write3 $(\mathrm{t}=1.066)$.

Table 14.2 also provides information on the unstandardized regression weights (b), standard errors (s.e) and critical ratios ( t ) as well as the standardized regression weights $(\beta)$ of the hypothesized model.

Table 14.2 The Metric Weight (b), Standard Error, Critical Ratios, p-values and Standardized Weights ( $\beta$ ) of the Hypothesized Model

|  |  |  | Weight (b) | s.e | t | p | Regression Weight ( $\beta$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Write2 | <--- | Write1 | . 340 | 0.028 | 12.156 | <0.001 | . 292 |
| Listen2 | <--- | Write1 | . 156 | 0.026 | 6.076 | <0.001 | . 147 |
| Write2 | <--- | Read1 | . 217 | 0.026 | 8.265 | <0.001 | . 200 |
| Listen2 | <--- | Read1 | . 163 | 0.024 | 6.756 | <0.001 | . 164 |
| Read2 | <--- | Write1 | . 102 | 0.023 | 4.374 | <0.001 | . 115 |
| Listen2 | <--- | Listen1 | . 383 | 0.026 | 14.757 | <0.001 | . 339 |
| Write2 | <--- | Listen 1 | . 210 | 0.028 | 7.426 | <0.001 | . 170 |
| Read2 | <--- | Read1 | . 182 | 0.022 | 8.294 | <0.001 | . 219 |
| Read2 | <--- | Listen1 | . 152 | 0.024 | 6.447 | $<0.001$ | . 161 |
| Write3 | <--- | Write1 | . 095 | 0.033 | 2.859 | 0.004 | . 080 |
| Listen3 | <--- | Read1 | . 070 | 0.028 | 2.489 | 0.013 | . 066 |
| Listen3 | <--- | Listen2 | . 276 | 0.026 | 9.650 | <0.001 | . 259 |
| Read3 | <--- | Read1 | . 139 | 0.027 | 5.062 | <0.001 | . 137 |
| Listen3 | <--- | Listen1 | . 124 | 0.029 | 3.989 | $<0.001$ | . 103 |
| Listen3 | <--- | Write2 | . 013 | 0.026 | . 487 | 0.617 | . 013 |
| Listen3 | <--- | Write1 | . 051 | 0.030 | 1.683 | 0.093 | . 045 |
| Write3 | <--- | Listen1 | -. 002 | 0.030 | -. 054 | 0.996 | -. 001 |
| Read3 | <--- | Write1 | . 042 | 0.029 | 1.410 | 0.159 | . 038 |
| Read3 | <--- | Listen1 | . 029 | 0.021 | . 944 | 0.130 | . 025 |
| Read3 | <--- | Read2 | . 185 | 0.030 | 6.065 | <0.001 | . 151 |
| Read3 | <--- | Write2 | . 083 | 0.026 | 3.218 | 0.001 | . 089 |
| Read3 | <--- | Listen2 | . 113 | 0.025 | 4.027 | <0.001 | . 110 |
| Write3 | <--- | Read1 | . 048 | 0.031 | 1.560 | 0.119 | . 044 |
| Write3 | <--- | Read2 | . 078 | 0.034 | 2.283 | 0.020 | . 059 |
| Write3 | <--- | Write2 | . 209 | 0.028 | 7.248 | $<0.001$ | . 207 |
| Write3 | <--- | Listen2 | . 033 | 0.021 | 1.066 | 0.130 | . 030 |
| Listen3 | <--- | Read2 | . 126 | 0.031 | 4.062 | <0.001 | . 099 |
| Note $=$ shaded coefficients are not significant <br> Weight ( $b$ ) = Unstandardised Regression Weights (Metric) <br> se= Standard Error <br> $\mathrm{t}=$ Critical Ratio <br> $\mathrm{p}=$ Probability Value <br> Regression Weight $(\beta)=$ Standardised Regression Weights |  |  |  |  |  |  |  |

It can be seen in Table 14.2 that with the exception of the regression paths from Write2 to Listen3, from Write1 to Listen3, from Listen1 to Write3, from Write1 to Read3, from Listen1 and Read3, from Read1 to Write3 and from Listen2 and Write3 (as is highlighted in Table 14.2), all critical ratios (t) and associated p-values indicate that these unstandardized regression weights are significantly different from zero and remain in the model. For example, the unstandardized direct effect of Write2 on Listen 3 is 0.013 . This means that a unit increase on the Write2 variable gives rise to a 0.013 -unit increase on Listen3. The estimate standard error for this direct effect is 0.026 , so $\mathrm{t}=0.013 / 0.026=0.487$, which is less than the critical value of 1.96 . Therefore, the path estimated can be dropped from the model.

The unstandardized regression weight of Write 1 on Write 2 is 0.340 . This means that a 1 -unit increase on the Write 1 variable gives rise to a 0.340 -unit increase on Write 2. The estimated standard error for this direct effect is 0.028 (Table 12.2), so $\mathrm{t}=$ $0.340 / 0.028=12.16$, which exceeds the critical value for a two-tailed statistical test at the 0.05 level. Therefore, the path estimate remains in the model. Other unstandardized path coefficients in Table 14.2 are interpreted in similar ways.

Table 14.2 also reports the standardized path coefficients. However there are no standard errors recorded for the standardized estimates, which is typical in standard ML estimation (Kline, 2011). Therefore, there is no information about statistical significance associated with the standardized results simply because this information is consistent with the information already presented and discussed for the unstandardized estimates. The standardized coefficient for the direct effect of Listen1 on Listen 2 is 0.339 . That is, a score on Listen1 one full standard deviation above the mean gives rise to a Listen 2 value that is just over 0.339 standard deviations above the mean. Results for the other standardized direct effects in the model are interpreted in similar ways. Table 14.3 provides information about covariances in the estimate column which describe the association between the two listed variables.

Table 14.3 Covariances

|  |  |  | Estimate | s.e | t | p |
| :--- | :--- | :---: | :--- | :---: | :---: | :---: |
| Write1 | <--> | Listen1 | 12.953 | .649 | 19.953 | $<0.001$ |
| Write1 | <--> | Read1 | 16.943 | .763 | 22.201 | $<0.001$ |
| Read1 | <--> | Listen1 | 14.188 | .699 | 20.303 | $<0.001$ |
| e6 | <--> | e4 | 6.993 | .472 | 14.828 | $<0.001$ |
| e6 | <--> | e5 | 7.866 | .517 | 15.227 | $<0.001$ |
| e4 | <--> | e5 | 9.230 | .572 | 16.135 | $<0.001$ |
| e8 | <-> | e9 | 13.675 | .743 | 18.402 | $<0.001$ |
| e9 | <--> | e7 | 10.631 | .661 | 16.095 | $<0.001$ |
| e8 | <--> | e7 | 16.410 | .783 | 20.965 | $<0.001$ |

Table 14.3 records the covariances of the independent variables and the residual terms for the dependent variables. The covariances between independent variables suggest that all the critical ratios ( t ) and associated p -values are significantly different from zero and can remain in the model. The covariance between Write 1 and Read1 is 16.94. If this covariance is standardized, this relationship is equivalent to a correlation of 0.576 as is highlighted in Table 14.4 where this relationship is expressed as a correlation.

Table 14.4 Correlations

|  |  |  | Estimate |
| :--- | :--- | :--- | :---: |
| Read1 | <--> | Listen1 | .513 |
| Write1 | <--> | Listen1 | .502 |
| Write1 | --> | Read1 | .576 |
| e6 | <-> | e4 | .354 |
| e6 | <-> | e5 | .365 |
| e4 | <-> | e5 | .389 |
| e8 | <--> | e9 | .455 |
| e9 | <--> | e7 | .388 |
| e8 | <--> | e7 | .535 |

Table 14.4 records the correlations between two measured variables. The correlations recorded in Table 14.4 are simply standardized covariances.

## Assessing Initial Model Fit Results

The results of analyses show that the model is just-identified since this model considers the same number of free parameters as observations. This model produces a degree of freedom equals to zero ( $\mathrm{df}=0$ ). Kaplan (2009) argued that some authors required a degree of freedom to be equal to or greater than $0(\mathrm{df} \geq 0)$. However, most structural equation models with zero degrees of freedom that are also identified, always have a perfect fit with a $\chi^{2}$ value equal to zero, therefore the fit statistics are not generated. Although the model analysed can reproduce perfectly the covariance matrix of the data, the result of examining the statistical significance of each estimated parameter in the hypothesised model shows that some parameter estimates are not in the expected direction and may be statistically different from zero (that is, the critical ratio is less than $\pm 1.96$, at the $\alpha=0.05$ significance level). Model respecification can be undertaken by fixing all the non-significant parameters to zero in a revised model.

## Model Re-specification

The source of mis-specification may stem from the omission or inclusion of certain variables. For instance, the researcher may have failed to specify a direct relationship between observed or latent variables that are highly correlated. Alternatively, a relationship between latent variables that are not related may need to be specified. Specification error occurs when the mis-specified model produces biased parameter estimates. As a result of a specification error, the researcher may seek to respecify the hypothesized model with the aims of identifying the true model and improving model fit.

The results of analyses may show that all coefficients are statistically significant according to traditional criteria. From the model the matrix of the sample covariances or the sample correlations matrix can be reproduced and examined for problems with the residual covariances and the standardized residual covariances. The main problem is that the values of some critical ratios ( t -values) may be less than $\pm 1.96$. This suggests that the regression path estimates are not significantly different from zero and can be excluded from the model. The examination of the critical ratios is the main procedure for performing a re-specification of the model (Schumacher and Lomax, 1996) aided by the chi-square test and the modification indices.

The trimming process in the re-specification of the model is begun by removing the path which has the smallest critical ratio value. Removal of paths is conducted one at a time which means that it is not done simultaneously for all paths with critical ratio values that are less than 1.96. This is because when one path with a small critical ratio is removed, other critical ratio values can change and increase, or even decrease. Consequently, trimming is conducted carefully and systematically until satisfactory results are achieved and the new estimates are examined and discussed. If any existing paths are dropped because theoretically they can be zero, then the model can become 'over-identified', since the model can have more equations than parameters available to be solved in the estimation process.

The results of these analyses show that the model is recursive. The three coefficients recorded for each path of the model represent the unstandardized regression weight (b), the standard error (s.e) and the standardized regression weight ( $\beta$ ) respectively. For example, the path coefficients from Listen1 to Listen2 are recorded as 0.38 (0.03) 0.34. For this path, 0.38 represents the unstandardized regression weight (b), 0.03 is its standard error (s.e) and 0.34 is the standardized regression weight ( $\beta$ ).

Figure 14.5 indicates that there are 15 variables in the model comprising of nine (9) observed and six (6) unobserved variables. Another way of categorising the 15 variables is to state that nine (9) of them are exogenous and six (6) are endogenous. There are 39 parameters to be estimated so there are six (from 45-39=6) more pieces of information than are needed to identify the model. This value of six (6) is called the degree of freedom for the model. The revised model of the nine variables is presented in Figure 14.5, with all estimated parameters recorded.

Figure 14.5 shows that the results of the nine observed variable analyses using the AMOS program are similar to the results of the nine latent variables analyses using the PLSPATH program presented in Chapter 13. It can be seen from Figure 14.5 that all the three observed variables operating at Time 1, namely Listen1, Write 1 and Read1 have influences on the three observed variables operating at Time 2, namely Listen2, Write2 and Read2. Each path in the model records three values, namely regression weight (b), standard error (s.e) and standardized regression weight ( $\beta$ ).


Figure 14.6 The Final Nine Variable Model

From the raw data contained in the SPSS data file, the AMOS program computes the sample covariance matrix (i.e. the variance of each observed variable and the covariances among them). These variances and covariances become the raw data used to estimate the model parameters. Table 14.5 records the covariances matrix, while Table 14.6 records the simple correlations between variables. Hoyle and Panter (1995, p. 160) suggested that

In reporting the data, rounding to three rather than the customary two decimal places will ensure that additional data analyses take full advantage of the precision offered by SEM computer programs.

Table 14.5 Covariance Matrix

|  | Listen1 | Read1 | Write1 | Read2 | Listen2 | Write2 | Read3 | Listen3 | Write3 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Listen1 | 24.254 |  |  |  |  |  |  |  |  |
| Read1 | 14.188 | 31.507 |  |  |  |  |  |  |  |
| Write1 | 12.953 | 16.943 | 27.433 |  |  |  |  |  |  |
| Read2 | 7.595 | 9.619 | 7.852 | 21.706 |  |  |  |  |  |
| Listen2 | 13.611 | 13.197 | 11.987 | 12.689 | 30.940 |  |  |  |  |
| Write2 | 12.586 | 15.589 | 15.731 | 14.222 | 19.035 | 37.253 |  |  |  |
| Read3 | 7.191 | 10.054 | 7.978 | 8.501 | 10.137 | 11.048 | 32.399 |  |  |
| Listen3 | 9.522 | 9.867 | 8.675 | 8.429 | 13.591 | 10.964 | 16.637 | 35.191 |  |
| Write3 | 5.547 | 7.548 | 7.695 | 6.286 | 7.755 | 11.763 | 18.216 | 21.095 | 38.015 |

Cudeck (1989) argued that in structural equation models estimations should always be based on the matrices of covariances, and not correlations. Moreover, Hoyle and Panter (1995, p. 161) added that

Although there was a time when it was reasonable to estimate from a correlation matrix in order to obtain standardized parameter estimates, this is not the case at present in light of the welldocumented liabilities of employing correlation matrices as data under particular model constraints and the ability of SEM software to provide standardized estimates when covariances are used as input.

However, since covariances are not as informative or meaningful as are correlations for describing the relative strengths of relationships between measured variables, presenting a correlation matrix accompanied by the standard deviations of the variables is sometimes recommended. This is because there are two clear benefits for the inclusion of both covariance and correlation matrices as is argued by Hoyle and Panter (1995, p. 162)

First, it provides the opportunity for other researchers to fit their own alternative models - models that either were not considered or not formally proposed in the published report. Second, these data show the relations among variables in the most rudimentary fashion, permitting curious (and suspicious) readers to see the simple bivariate relations that underlie the models that were estimated.

However, Huba and Harlow (1987), and Muthen (1993) argued that when the data to be analysed is not interval-level data, but ordered categorical data, a covariance matrix is no longer appropriate for SEM analyses and may in some cases lead to incorrect statistical inference.

By standardising the covariance matrix AMOS also computes the correlation matrix. The correlation matrix is presented in Table 14.6 and gives an impression about the strength of the relationships among the observed variables.

Table 14.6 Correlation Matrix

|  | Listen1 | Read1 | Write1 | Read2 | Listen2 | Write2 | Read3 | Listen3 | Write3 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Listen1 | 1.000 |  |  |  |  |  |  |  |  |
| Read1 | .513 | 1.000 |  |  |  |  |  |  |  |
| Write1 | .502 | .576 | 1.000 |  |  |  |  |  |  |
| Read2 | .331 | .368 | .322 | 1.000 |  |  |  |  |  |
| Listen2 | .497 | .423 | .411 | .490 | 1.000 |  |  |  |  |
| Write2 | .419 | .455 | .492 | .500 | .561 | 1.000 |  |  |  |
| Read3 | .257 | .315 | .268 | .321 | .320 | .318 | 1.000 |  |  |
| Listen3 | .326 | .296 | .279 | .305 | .412 | .303 | .493 | 1.000 |  |
| Write3 | .183 | .218 | .238 | .219 | .226 | .313 | .519 | .577 | 1.000 |

Correlation (r) matrices as are recorded in Table 14.6 provide information about the linear relationship between two variables. Correlations can range from -1.00 to +1.00 Cohen (1992, p. 157).

These guidelines apply whether or not there is a positive or negative sign in front of the correlation (r) value. The negative or the positive sign only indicates the direction of the relationship, and not the strength or magnitude of the relationship. Both positive and negative signs of the same size, say $r=-0.30$ and $r=0.30$ have the same strength of relationship. They only differ in direction. The absolute size of the correlations as shown in Table 14.6 describes the magnitudes of the relationships between variables. Therefore, correlation matrices inform in a meaningful way the pair-wise relationships between a set of variables.

As is highlighted in Table 14.6 the correlation matrix shows large correlations among the first cluster of variables (variables at Time 1) Listen1, Write1 and Read1 as well as between Listen1 and Write 1 ( 0.502 and 0.576 ). There are also large correlations among the second cluster of variable (variables at Time 2) Write2 and Read2 as well as Listen2 ( 0.500 and 0.561 ). Moreover, among the third cluster of variables (variables in Time 3), reasonably large correlations are indicated by variables Write 3 and Read3 as well as Listen3 (0.519 and 0.577).

Some variables from Time 1, Time 2 to Time 3 appear to be at least moderately correlated between three different occasions as are indicated by the effect sizes that are roughly above 0.30 , but some of these pairs of variables have only small correlations.

Table 14.7 shows unstandardized regression coefficients (b), standard error (s.e), the $t$-value in the critical ratio column and the standardised regression coefficients $(\beta)$ of
the revised model. It can be seen in Table 14.7 that all critical ratios ( t ) indicate that these unstandardized regression weights are significantly different from zero and therefore need to remain in the model. Kirk (1996) suggested a classification system for assessing the relative size of an effect with standardized regression weights ( $\beta$ ) estimates

> less than $\pm 0.10$ trivial
> between $\pm 0.10$ and $\pm 0.24$ small
> between $\pm 0.25$ and $\pm 0.37$ medium
> greater than +0.38 or less than -0.38 large

Table 14.7 Weights (b), Standard Errors (s.e), Critical Ratios (t), p-value and Weights ( $\boldsymbol{\beta}$ )

|  |  |  | Weight (b) | s.e | t | P | Regression Weights ( $\beta$ ) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Write2 | <--- | Write1 | . 340 | . 028 | 12.16 | $<0.001$ | 0.29 |
| Listen2 | <--- | Write1 | . 156 | . 026 | 6.08 | <0.001 | 0.15 |
| Write2 | <--- | Read1 | . 217 | . 026 | 8.27 | <0.001 | 0.20 |
| Listen2 | <--- | Read1 | . 163 | . 024 | 6.76 | <0.001 | 0.16 |
| Read2 | <--- | Writel | . 102 | . 023 | 4.37 | <0.001 | 0.12 |
| Listen2 | <--- | Listen1 | . 383 | . 026 | 14.76 | <0.001 | 0.34 |
| Write2 | <--- | Listen1 | . 210 | . 028 | 7.43 | <0.001 | 0.17 |
| Read2 | <--- | Read1 | . 182 | . 022 | 8.29 | <0.001 | 0.22 |
| Read2 | <--- | Listen1 | . 152 | . 024 | 6.45 | $<0.001$ | 0.16 |
| Write3 | <--- | Write1 | . 058 | . 026 | 2.25 | . 024 | 0.05 |
| Listen 3 | <--- | Read1 | . 099 | . 025 | 3.98 | <0.001 | 0.09 |
| Listen 3 | <--- | Listen2 | . 270 | . 023 | 11.63 | <0.001 | 0.25 |
| Read3 | <--- | Read1 | . 170 | . 024 | 7.11 | <0.001 | 0.17 |
| Listen 3 | <--- | Listen1 | . 128 | . 025 | 5.07 | <0.001 | 0.11 |
| Read3 | <--- | Read2 | . 194 | . 030 | 6.46 | <0.001 | 0.15 |
| Read3 | <--- | Write2 | . 088 | . 023 | 3.84 | <0.001 | 0.10 |
| Read3 | <--- | Listen2 | . 111 | . 024 | 4.63 | <0.001 | 0.11 |
| Write3 | <--- | Read1 | . 073 | . 028 | 2.58 | . 010 | 0.07 |
| Write3 | <--- | Read2 | . 096 | . 032 | 2.98 | . 003 | 0.07 |
| Write3 | <--- | Write2 | . 213 | . 023 | 9.12 | <0.001 | 0.21 |
| Listen3 | <--- | Read2 | . 142 | . 029 | 4.84 | <0.001 | 0.11 |

$\mathrm{se}=$ standard error, $\mathrm{t}=$ critical ratio, $\mathrm{p}=$ probability

An explanation of the terms used in Table 14.7 is stated as follows. Lomax (1992) pointed out that there has been a debate among researchers on the use of unstandardized or standardized variables. The unstandardized regression weight (b) represents the amount of change in the dependent variable for each 1-point score unit change in the independent variable. Arbuckle (1999) argued that the independent variable is linked to its dependent variable by the regression weight or path coefficient. When the variables in a model do not have the same scale, the
unstandardized path coefficients cannot be directly compared (Kline, 2011). The unstandardized coefficients allow an examination of change across different samples. However, this comparison is a problem for the standardized path coefficients.

The standardized coefficients represent the amount of change in the dependent variable given a standard deviation unit change in the predictor variable (Kline, 2011). The standardized coefficients or the standardized regression weights are considered to be sample-specific and not stable across different samples because of changes in the variances of the variables. The usefulness of the standardized coefficients is the possibility to assess the relative importance of each variable compared with others for a given sample, since the variables are on the same unit scale of measurement. As a result the variables are more easily interpreted, and can be readily converted back to the raw scale metric if necessary.

The standardized weight is a regression coefficient indicating the amount of change in the dependent variable given one standard deviation unit change in the independent variable (Kline, 2011). The standardized regression coefficient is also called a beta weight because each standardized coefficient estimates a population parameter designated by the symbol $\beta$ (Kline, 2011). The standardized weight can also be interpreted as an effect size. However, it is also possible that a beta weight $(\beta)$ and the corresponding correlation (r) have signs that are in opposite directions, for example a beta weight is negative, while the corresponding correlation is positive. When such an anomaly occurs, a suppression effect is indicated. Kline (2011, p. 26) describes 'suppression' as follows.

Suppression occurs when either the absolute value of a predictor's beta weight is greater than its bivariate (zero-order) correlation with the criterion or the two have different signs. ......Suppression implies that the estimated relation between a predictor and a criterion while controlling for the other predictors is a "surprise," given the bivariate correlations.

Suppression relationships need to be carefully examined because they may arise from serious measurement error or from problem of a multicollinearity in the analyses of the data. The critical ratio is perhaps the most useful form of a statistical test. This is the ratio of a sample statistic over its standard error. The approximate standard errors (s.e) are defined as

The standard deviation of a sampling distribution, which is a probability distribution of a statistic based on all possible random samples, each based on the same number of cases. A standard error
estimates sampling error, the difference between sample statistics and the corresponding population parameter. Given constant variability among population cases, standard error varies inversely with sample size. This means that distributions of statistics from larger samples are generally narrower (less variable) than distributions of the same statistic from smaller samples. (Kline, 2011, p. 33-34)

For the metric or unstandardized regression weight (b), the regression coefficient of 0.383 for Listen 1 to Listen2 (as is highlighted in Table 14.7) means that for one unit increase in Listen1 there is a 0.383 unit increase in Listen2. This value is the largest metric or unstandardized regression coefficient obtained among other regression path estimates. The Critical Ratios (t) column records $t$-values. The $t$-value of 12.16 for the regression coefficient Write1 to Write2 (as is highlighted in Table 14.7) means that this coefficient (0.34) is significantly different from zero and the relationships therefore remain in the model.

Considering the standardized regression weight ( $\beta$ ), the standardized regression coefficient of 0.29 for Write 1 to Write 2 means that for a one standard deviation increase in Write 1 there is a 0.29 standard deviation increase in Write2. Among other regression relationships, the path from Write1 to Write2 produces the strongest coefficient with the beta coefficient $(\beta)$ of 0.29 , while the weakest coefficient is produced by the path from Write 1 to Write3 with the beta coefficient of 0.05 .

Table 14.8 records the Squared Multiple Correlations (SMC) or ( $\mathrm{R}^{2}$ ) and the coefficients of Residual Paths of the revised model. Squared Multiple Correlations $\left(\mathrm{R}^{2}\right)$ are only produced for the dependent (endogenous) variables. The Squared Multiple Correlation ( $\mathrm{R}^{2}$ ) values also indicate the percentage of variance of the dependent variable that is accounted for by their direct antecedent variables. The SMC of 0.306 indicates that the model explains 31 per cent of the variance in Write2.
Table 14.8 Squared Multiple Correlations and Coefficient of Residual Paths

|  | $\mathrm{R}^{2}$ | Residual Path |  | Estimate |
| :---: | :---: | :---: | :---: | :---: |
| Read1 | - | Write1 | <--> Listen1 | . 502 |
| Write1 | - | Write1 | <--> Readl | . 576 |
| Listen1 | - | Read1 | <--> Listen1 | . 513 |
| Read2 | . 171 | e6 | <--> e4 | . 354 |
| Listen2 | . 298 | e6 | <--> e5 | . 365 |
| Write2 | . 306 | e4 | <--> e5 | . 389 |
| Read3 | . 167 | e8 | <--> e9 | . 455 |
| Listen3 | . 198 | e9 | <--> e7 | . 389 |
| Write3 | . 106 | e8 | <--> e7 | . 535 |

For a path model of causal relationships, the effects can be separated into two types of effects, namely direct effects and indirect or mediated effects. The Standardized Direct Effects of the model are presented in Table 14.9.

Table 14.9 Standardized Direct Effects

|  | Read1 | Write1 | Listen1 | Read2 | Listen2 | Write2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Read2 | .219 | .115 | .161 | ns | ns | ns |
| Listen2 | .164 | .147 | .339 | ns | ns | ns |
| Write2 | .200 | .292 | .170 | ns | ns | ns |
| Read3 | .168 | ns | ns | .159 | .109 | .095 |
| Listen3 | .094 | ns | .106 | .112 | .254 | ns |
| Write3 | .067 | .050 | ns | .073 | ns | .212 |

The standardized direct effect is simply the standardized regression weight. The model is said as having direct effects when there are effects that operate directly from one variable to a second variable. For example, Read1 influences Read2 directly with a path coefficient of 0.219 . The standardized direct effect of 0.219 for Read1 to Read2 means that for a one standard deviation increase in Read1 there is a 0.219 standard deviation increase in Read2.

Table 14.10 Standardized Indirect Effects

|  | Read1 | Write1 | Listen1 |
| :--- | ---: | ---: | ---: |
| Read3 | .072 | .062 | .078 |
| Listen3 | .066 | .050 | .104 |
| Write3 | .058 | .070 | .048 |

Table 14.10 records the standardized indirect effects of the model. Table 14.10 shows that some observed variables in the model have indirect effects on another observed variable. One variable is identified as having an indirect effect or a mediated effect on another variable when one variable influences a second, which in turn influences a third. In such circumstances, the effect of the first variable on the third variable is mediated by the second variable. Thus the third variable is influenced by an effect operating through a second variable.

For example, Figure 14.6 shows how Listen1 has an indirect effect on Read3 through Listen2. This indicates that the effect of Listen1 on Read3 is mediated by Listen2. The magnitude of this effect is estimated by multiplying together the two path coefficients along the pathway. For example, the magnitude of the indirect effect $\left(\mathrm{i}_{31}\right)$ as is shown in Figure 14.7 is the regression coefficient for Listen1 to Listen2 $\left(\mathrm{p}_{21}\right)$ multiplied by $(\mathrm{X})$ the regression coefficient for Listen2 to Listen3 $\left(\mathrm{p}_{32}\right)$. Thus
$\mathrm{i}_{31}=\mathrm{p}_{21} \times \mathrm{p}_{32}$. However, this example applies for a model which has only one intervening or mediating variable.


Figure 14.7 Three-Variable Path Model

Baron and Kenny (1996) argued that in path models, two or more direct effect arrows can indicate indirect effects in the combination or linking of two variables. Unfortunately, there are no indirect effect paths added to path diagrams. However, they are seen from a chain of direct effects. Moreover, Kline (2011, p. 105) pointed out that

Indirect effects involve one or more intervening variables, or mediator variables, presumed to "transmit" some of the causal effects of prior variables onto subsequent variables.

The above statement indicates that in a simple model or even in a large model, indirect effects can include one mediating variable or many mediating variables, and consequently total indirect effects are generally calculated by the summing of several estimated indirect path coefficients (Maruyama, 1998). A concrete example for a model with many intervening variables is presented in Figure 14.5 that is the Nine Variables Model. Table 14.10 records that Read1 has an indirect effect on Read3 with path coefficient of 0.072 (as is highlighted in Table 14.10). In Figure 14.5, Read1 influences Read3 indirectly through three mediator variables, namely Listen2, Write2 and Read2.

Because there are three mediating variables that mediate the variable Listen1 to Read3, the magnitude of that relationship is the sum of the different indirect effects, namely,
(Read1 to Listen2 X Listen2 to Read3) + (Read1 to Write2 X Write2 to Read2) + (Read1 to Read2 X Read2 to Read3).

The representation in numbers is

$$
(0.164 X 0.109)+(0.200 X 0.095)+(0.219 X 0.159)=(0.018)+(0.019)+(0.035)=0.072 .
$$

The value of the sum of 0.072 states that the level of reading comprehension in Time 1 (Read1) is expected to increase by about 0.07 standard deviations units for every increase in the level of reading comprehension in Time 3 (Read3) of one full standard deviation through its prior effects on Listen2, Write2 and Read2. Therefore, in a path model the unavailability of a direct causal path does not mean that a variable does not have an important influence on a particular endogenous (dependent) variable. Standardized Total Effects of the model are recorded in Table 14.11.

Table 14.11 Standardized Total Effects

|  | Read1 | Write1 | Listen1 | Read2 | Listen2 | Write2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Read2 | .219 | .115 | .161 | .000 | .000 | .000 |
| Listen2 | .164 | .147 | .339 | .000 | .000 | .000 |
| Write2 | .200 | .292 | .170 | .000 | .000 | .000 |
| Read3 | .239 | .062 | .078 | .159 | .109 | .095 |
| Listen3 | .161 | .050 | .210 | .112 | .254 | .000 |
| Write3 | .125 | .120 | .048 | .073 | .000 | .212 |

All the variables that can influence another variable are listed across the top of the table as column headings and all the variables that can be influenced by another variable are listed down the side as row headings. For example, the total effect for Listen 1 on Listen 3 is 0.210 . This means that a one unit increase in Listen1 causes a total increase in Listen 3 of 0.210 unit. This is equivalent to the sum of the direct effect of the regression path for Listen1 to Listen3 (0.106) + the indirect effect of the regression path for Listen1 to Listen3 (0.104). The combination of both this direct and indirect effect is known as the total effect.

This examination of indirect and total effects is extremely important in this chapter. All too often only direct effects are considered. However, in the investigation of the interaction between the three component scores over the two time periods of the courses, it is necessary to examine not only direct effects but also the indirect and total effects.

## Assessing Model Fit

AMOS lists the Model Fit Statistics in associated blocks and gives the fit statistics for the model under consideration "default model", a "saturated model" and an "independence model". The saturated model is simply one where all possible parameters are estimated. Such models are always a perfect fit as is indicated by the value of chi-square $\left(\chi^{2}\right)$ and its degree of freedom. The chi-square $\left(\chi^{2}\right)$ value is zero
with zero degrees of freedom. The independence model contains only the variances of the observed variables with no other relationships. A summary of selected fit measures is given in Table 14.12. These fit measures are summarised from a variety of sources.

Table 14.12 Summary of Fit Measures from Various Sources

| Name | Abbreviation | Type | Acceptable level | Comments | Reference |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Chi-square (with its associated degrees of freedom and probability of significant difference) | $\begin{aligned} & \hline \chi^{2} \\ & (\mathrm{df}, \mathrm{p}) \end{aligned}$ | Fit Statistic | $\mathrm{P}>0.05$ <br> (for multivariate normal data) | Greatly affected by sample size and distributional properties of the data. P should be adjusted for non normal data. | Bollen (1989b, pp. 263269) <br> Satorra and Bentler (1994) |
| Root Mean-Square <br> Error of <br> Approximation  | RMSEA | Fit Statistic | $\begin{aligned} & \text { RMSEA < } 0.05 \\ & \text { PCLOSE > } 0.05 \\ & \text { LO } 90=0 \end{aligned}$ | $\mathrm{LO}=90$ suggests that even the test of exact fit is supported | $\begin{aligned} & \hline \text { Byrne (2001) } \\ & \text { Fan et al (1999) } \end{aligned}$ |
| Normed Chi-square | $\chi^{2 / d f}$ | Fit Statistic | $1.0<\chi^{2} / \mathrm{df}<2.0$ | Values close to 1 indicate good fit but values less than 1 may indicate overfit. | Jöreskog (1969) |
| Root Mean-square <br> Residual and Standardized RMR | RMR SRMR | Residual | SRMR < 0.06 | Large values for SRMR, when all other fit indices suggest good fit, may indicate outliers in the raw data. | Jöreskog and Sörbom (1989b) |
| Goodness-of-Fit and Adjusted Goodness-of-Fit | $\begin{aligned} & \text { GFI } \\ & \text { AGFI } \end{aligned}$ | Incremental Fit Index | GFI and AGFI > 0.95 |  | Jöreskog and Sörbom (1981) |
| Parsimony-Adjusted Goodness- of -Fit Index | PGFI | Incremental Fit Index | PGFI >0.95 |  |  |
| Tucker-Lewis Index, Non-Normed Fit Index or Rho2 | $\begin{aligned} & \text { TLI, NNFI or } \\ & \rho^{2} \end{aligned}$ | Incremental Fit Index | TLI > 0.95 | Values greater than 1 may indicate overfit | Tucker and Lewis (1973) Bentler and Bonett (1980) |
| Comparative Fit Index | CFI PGFI | Incremental Fit Index | CFI > 0.95 |  | Bentler (1989, 1990) |

The final nine variable model drawn in Figure 14.5 yields the Fit Statistics recorded in Table 14.13. Each of the Fit Statistics discussed in this chapter considers the final model only. Table 14.13 presents a number of other fit statistics, namely, Discrepancy, Residuals, Incremental (or Comparative) fit indices, and Indices of Model Parsimony. The question frequently arises: on which indices need to be reported? Since there are so many fit indices to choose from, the question is highly relevant. Unfortunately, there is little consensus on the best way to choose overall fit for evaluating structural equation models (Hoyle and Panter, 1995). Therefore, some researchers such as Marsh, Balla and McDonald (1988), encourage investigators who are evaluating and comparing models to report multiple indexes of overall fit. Moreover, they have not recommended that researchers must report a long list of fit indexes such as those that are routinely provided in SEM computer output (Hu and Bentler, 1995).

Table 14.13 Fit Statistics, Residual, Incremental Fit Indices and Indices of Model Parsimony

| Fit Measure | Hypothesized <br> Model | Final Model | Final Indication of Fit |
| :--- | :--- | :--- | :--- |
| Discrepancy (CMIN $/ \chi^{2}$ ) | 0.000 | 8.141 |  |
| Degrees of freedom (df) | 0.000 | 6 |  |
| P | - | 0.228 | A good fitting model |
| Number of parameters | 45 | 39 | A good fitting model |
| Discrepancy / df ( $\chi^{2} /$ df) | - | 1.357 |  |
|  |  |  |  |
| RMR (SRMR) | 0 | $0.332(0.0097)$ | A good fitting model |
| Goodness of fit index (GFI) | 1.000 | 0.999 |  |
| Adjusted GFI (AGFI) | - | 0.993 | A perfect fitting model |
| Parsimony-adjusted GFI (PGFI) | - | 0.133 | A parsimonious model |
| Incremental fit index (IFI) | 1.000 | 1.000 | A good fitting model model |
| Parsimony ratio (PRATIO) | 0.000 | 0.167 | A perfect fitting model |
| Tucker-Lewis Index (TLI) | - | 0.998 |  |
| Comparative fit index (CFI) | 1.000 | 1.000 | A good fitting model |
| Root Mean Square Error of |  |  | A goood fitting model |
| Approximation (RMSEA) | 0.298 | 0.292 | 0.013 |

An argument was raised by some researchers such as Kline (2011) and Schumacker and Lomax (1996) that there was no straightforward answer to what constituted good fit in SEM. However, general consensus agrees that good fit is identified by meaningful model-data correspondence.

Table 14.13 records that there are 39 parameters being estimated in the model shown in Figure 14.5 and the results recorded in subsequent Table 14.5 to Table 14.12. A $\chi^{2}$ (CMIN) of 8.141 with 6 (six) degree of freedom (df) has a Discrepancy ratio of 1.357. Since $\mathrm{p}=0.228$ and $\mathrm{p}>0.05$ the hypothesis that the model is a good fit to the data is tenable. Because the normed $\chi^{2}$ (CMIN/DF) is greater than one (1) and less than two (2) the normed $\chi^{2}$ suggests that the model is a good fitting model.

The Root Mean Residual (RMR) (0.332) is small. Moreover, the Standardized RMR is 0.0097 . Because the Standardized RMR is $<0.06$, this residual also suggests that the model is a good fitting model. The GFI (0.999) and the AGFI (0.993) are equal or greater than 0.95 ; these too suggest that the model is a good fitting model.

Since the IFI (1.000), the TLI (0.998) and the CFI (1.000) values are greater than 0.95 , they also suggest that the model is a good fitting model. The RMSEA ( 0.013 ) is less than 0.05 with a PCLOSE value of 0.999 . There is strong evidence that not only is the model a close fit, even the hypothesis that the model is very good fit may be considered tenable.

## Summary

In this chapter, path analysis is employed to test the theoretical model presented in Figure 14.1. All analyses are conducted using the AMOS computer program. These analyses employ the maximum likelihood method of parameter estimation, and all analyses are performed on the variance-covariance matrix. These results reveal that there are considerable similarities between the results of the PLSPATH analysis and the AMOS analysis in the way in which variables in the model operate and interrelate between Time 1, Time2 and Time 3.

The purpose of this chapter is to answer the first issue concerned with whether the three aspects of language skill that are involved in the assessment of English Foreign Language Proficiency performance, namely the skills of Listening, Writing and Reading, operate as separate entities, and are augmented as separate skills through the English I and English 2 courses that are conducted within the University.

English 1 is conducted between Time 1 and Time 2. The effects of some paths from Time 1 to Time 2 may be influenced by the effect of Course 1 (English 1) that is conducted between these time frames. Course 2 (English 2) is conducted between Time 2 and Time 3. Some paths linking Time 2 to Time 3 are found to have an influence on performance at Time 3. These effects must be expected to be a result of Course 2 that is undertaken between these time frames.

The results of goodness of fit indices for the final model are presented in Table 14.13. The chi-square statistic recorded in Table 14.13 provides information that the model is a very good fitting model. It is supported by all other fit indices such as GFI, AGFI, IFI, TLI, and CFI that are over 0.95 and close to 1.0 indicating an acceptable fit between the model and data. Moreover, the t -values for all path coefficients prove to be statistically significant ( $\mathrm{p}<0.05$ ), since all critical ratios
value are greater than 1.96. The Standardized RMR (0.0097) and the RMSEA ( 0.013 ) also suggest that the model is a very good fitting model.

Table 14.14 summarises the direct effect, indirect effect, and total effect. It is argued in this chapter that the influence of estimated effects operating between Time 1 and Time 2 are partly the result of the English 1 course conducted between Time 1 and Time 2. Similarly the effects operating between Time 2 and Time 3 are partly the result of the English 2 course conducted between Time 2 and Time 3.

Table 14.14 Summary of Standardized Direct Effects, Indirect Effect, and Total Effect

|  |  | Read1 | Write1 | Listen1 | Read2 | Listen2 | Write2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Direct Effect | Read2 | *** | ** | ** | - | - | - |
|  | Listen2 | ** | ** | *** | - | - | - |
|  | Write2 | ** | *** | ** | - | - | - |
|  | Read3 | ** | - | - | ** | ** | * |
|  | Listen3 | * | *** | ** | ** | *** | - |
|  | Write3 | *** | *** | - | * | - | ** |
| Indirect Effect | Read2 | - | - | - | - | - | - |
|  | Listen2 | - | - | - | - | - | - |
|  | Write2 | - | - | - | - | - | - |
|  | Read3 | * | * | * | - | - | - |
|  | Listen3 | * | * | ** | - | - | - |
|  | Write3 | * | * | * | - | - | - |
| Total Effect | Read2 | *** | ** | ** | - | - | - |
|  | Listen2 | ** | ** | *** | - | - | - |
|  | Write2 | ** | *** | ** | - | - | - |
|  | Read3 | *** | * | * | ** | ** | * |
|  | Listen3 | ** | * | *** | ** | *** | - |
|  | Write3 | ** | ** | * | * | - | *** |

***means $X>0.200 ; * *$ means $0.10<X<0.200 ;$ *means $X<0.100 ;$ - means 0.000

Table 14.14 indicates that the more stars the stronger the effects, the less stars the weaker the effects. The result of this analysis shows that after deleting all nonsignificant paths, the revised nine-variable model as is presented in Figure 14.5 produces better estimates than the initially hypothesized model. If the hypothesized model and the revised nine variable model indices are compared, the revised nine variable model can be identified as the better model in several respects.

1. The revised nine variable model has fewer unknowns than equations (called an over-identified model in the path analyses and SEM), there is enough information to produce more estimates than parameters, while the hypothesized model has the same number of equations as unknown parameters is a just-identified model.
2. The revised nine variable model has a p-value of 0.228 , while the hypothesized model does not produce a p-value.
3. The revised nine variable model has a normed chi-square (CMIN/DF) of 1.357, while the hypothesized model is not able to calculate the normed chisquare.
4. The revised nine variable model is able to produce a Root Mean Square Error of Approximation (RMSEA) of 0.013, while the hypothesized model has RMSEA value of 0.298 .
5. The revised nine variable model has better estimates in terms of the values of GFI (0.999), AGFI (0.993), IFI (1.000), TLI (0.998) and CFI (1.000) than the hypothesized model.
6. The revised nine-variable model is a superior model when compared to the hypothesized model as is indicated by the goodness of fit indices considered in a group.

More importantly, the good fitting model and the estimated parameters show that the three aspect of language skills that are involved in the assessment of English language proficiency performance, namely the skills of Listening, Writing and Reading, can be argued to operate as separate entities, and appear to be developed as such through the English I and English 2 courses that are conducted within the University.
Moreover, the results in this chapter have shown that path analysis using the AMOS program is a necessary step in the confirmatory examination of the available data in order to identify whether the three skills, namely Listening, Writing and Reading interact at all stages in the development of English Language Proficiency performance, or only operate as one entity during the instruction provided in the English 1c and English 2c courses. This issue warrants further investigation in the following chapters of this thesis. Hence, in the next chapter, results are reported from analyses that are also undertaken using AMOS in which the estimation of the relationships between the latent (unobserved) variables and between the latent variables and the manifest (observed) variates are examined.

## CHAPTER 15 MEASURING ENGLISH FOREIGN LANGUAGE PROFICIENCY AS A SINGLE ENTITY

## Introduction

This chapter examines a key question and discusses the second issue that is addressed in the previous chapter in which evidence is presented that a single competence, namely, an 'English Language Proficiency' is best employed to assess performance. While the three separate components of Listening, Writing, and Reading are the three skills that are involved in this competence, the test must be considered as a whole which is best considered to involve the mutual interaction of these component skills. Consequently, the evidence presented so far indicates that the test for proficiency cannot be meaningfully subdivided into its three parts. However, the analyses carried out in the previous chapter are exploratory in nature and require more rigorous confirmation through the use of the AMOS computer program (Arbuckle, 1999). This chapter begins by stating the research questions to be answered by the AMOS analyses.

## Research Questions Advanced

The main research question in this chapter is: 'Is English Foreign Language Proficiency better considered and taught as separate skills or as a single entity'?

In order to address this primary research question, six further research questions are advanced. The additional research questions are as follows.

1. How well do the models hypothesized fit the data available in this study?
2. How are the latent variables causally linked to their respective manifest variates?
3. How are earlier latent variables causally linked to the later latent variables?
4. What are the relationships between the variates during the English Language Proficiency Courses from Time 1, to Time 2, and to Time 3?
5. Are there any changes in the magnitudes of effects of the course and the relationships between the latent variables from Time 1, to Time 2, to Time 3?
6. How do the treatments provided by Course 1 and Course 2 influence the outcome of English Language Proficiency?

Consequently, there are six general findings from the AMOS analyses that are presented and discussed in this chapter. However, it is necessary to consider
thoroughly the purposes of this chapter within this study before these research questions are answered.

## The Purposes of the Analyses in this Chapter

The purpose of the analyses in this chapter is to answer the research questions given above. Therefore, this chapter examines the relationships between the three latent variables that are employed during the conducting of the course as well as the relationships between the latent variables and their manifest variates. Furthermore, it is important to examine the effects of the treatment provided and to assess the extent to which the models specified fit the observed data. Statistical inferences can then be drawn regarding the relationships arising from the models advanced and the parameters of a best fitting model can be estimated.

In order to examine (a) how well the models proposed in the study fit the data; (b) how the latent variables are causally linked to their respective manifest variates; (c) how certain latent variables are causally linked to other latent variables; (d) whether there are changes in the structure of the relationships between the manifest variates in the model across periods from Time 1 to Time 2 and Time 3; (e) whether there are any changes in the magnitudes of relationships from Time1, Time 2 to Time 3; and (f) whether the treatments provided by the Course have effects on English Language Proficiency, since the model referred to as 'hypothesized model' is advanced and modified to produce a more coherent model in its explanatory powers. The following sections discuss the results of these analyses in order to answer the six research questions advanced above. This starts with the first research question whether or not alternative approaches and models proposed in the study fit the data. This initially requires a more detailed consideration of the fit indices that are available in the AMOS computer program.

## How Well does the Model Proposed in the Study Fit the Data?

This section seeks to answer the first research question: (a) how well does the model proposed in the study fit the data. This research question can only be answered by first discussing how 'model fit' can be assessed. A section about model fit is presented in Appendix 15.1A on Model Specification, since it involves very technical information that, if presented here, may detract from the arguments advanced.

## AMOS Initial Analyses

Each of the fit indices may behave differently under different circumstances. Therefore, different conditions and situations need to be considered when assessing model fit. The predictive power of the model is assessed using the statistical indicators provided by the AMOS output. Table 15.1 records the results of the hypothesised model analysis using AMOS.

Table 15.1 Measurement and Structural Models for the Original Model of English Language Proficiency Using AMOS


A large number of fit indices are produced by the AMOS output for every analysis. AMOS lists the Model Fit Statistics in associated blocks and estimates the fit statistics for the model under consideration, the default model, a saturated model, and an independence model. The saturated model is simply a model in which all possible parameters are estimated. Such models always have a perfect fit, so $\chi^{2}$ is zero with
zero degrees of freedom. The independence model contains only the variances of the observed variables with no other relationships (Arbuckle, 1999).

Table 15.1 shows the unstandardized regression coefficients (b) or the factor loadings $(l)$, the standardized regression coefficients $(\beta)$, the standardized loadings $(\lambda)$, the standard errors (s.e), critical ratios ( t ) and and $\mathrm{R}^{2}$ (Squared Multiple Correlation) as well as the goodness-of-fit statistics (GOF) of the hypothesised model. In further discussion, the hypothesised model is named the 'original model'. Figure 15.1 presents the results of the standardized and unstandardized original model analysis.


Figure 15.1 Model of English Language Proficiency Recorded with the Unstandardized and the Standardized Regression Coefficients: Original Model ${ }^{\text {a }}$
${ }^{\text {a }}$ Recorded on paths are loadings (l), standard errors (se), and standardized loadings ( $\lambda$ )

Table 15.1 also presents a selection of the fit indices produced by the AMOS computer program. These include indices for assessing absolute model fit, comparative model fit and model parsimony as recommended by Schumacher and Lomax (1996).

Table 15.1 also records the results for the measurement model and the structural equation model analysis. The weight (b) column presents the unstandardized regression coefficients factor loadings (l). For example, the regression coefficient of 0.56 for PRETEST $\rightarrow$ NOSTIC (in the structural equation model) means that for a one unit increase in PRETEST there is a 0.56 unit increase in NOSTIC.

Moreover, the factor loading of 0.81 for PRETEST $\rightarrow$ Listen 1 means that for a one unit increase in PRETEST there is a 0.81 unit increase in Listen1. The values of the loadings are all more than twice the values of their standard errors as recorded in the s.e column and are consequently statistically significant.

The t -values are recorded in the t (critical ratio) column and p -values in the column for statistical significance. The t -values $>1.96$ (approx. 2.00) or p -values $<0.001$ indicate statistical significance at the 0.001 level. For example, the critical ratio of 8.16 for the regression coefficient NOSTIC $\rightarrow$ ELPT with a p-value close to zero (<0.001) means that this coefficient (0.65) is significantly different from zero and therefore can remain in the model.

On the other hand, the t -values of 1.81 for the regression coefficient PRETEST to ELPT with a p-value of 0.07 means that this coefficient ( 0.10 ) is not significantly different from zero (at the 0.05 level) but is marginally significant with a p-value lying between 0.05 and 0.10 and therefore can be fixed to zero (i.e. the path can be dropped from the model). This marginally significant relationship indicates that the effects of initial performance on the English Language Proficiency tests (PRETEST) has limited influence directly on final performance (ELPT), as well as operating indirectly through its effects on the Diagnostic test (NOSTIC). Thus, in this study the path from PRETEST to ELPT is not dropped from the model as it is related to one of the research questions advanced in this study, and it is of interest to examine whether or not there is an effect of the treatment and the course.

The beta weights or standardized regression coefficients are recorded in Weight ( $\beta$ ) column and show that all the path coefficients and the factor loadings have strong effects (> 0.50) except for PRETEST $\rightarrow$ ELPT that has only a weak effect (0.10). The standardized regression coefficient of 0.79 for PRETEST $\rightarrow$ NOSTIC means that for a one standard deviation increase in PRETEST there is 0.79 standard deviation increase in NOSTIC.

The Squared Multiple Correlations (SMC) that are recorded in the $\mathrm{R}^{2}$ column, are grouped into those associated with the dependent variables (NOSTIC and ELPT) in the structural part of the model and those associated with the reflective indicators in the measurement part of the model. These estimates for the dependent variables are equivalent to the $\mathrm{R}^{2}$ value in a regression analysis. For example, the SMC of 0.63 for NOSTIC indicates that the model explains 63.0 per cent of the variance in NOSTIC. On the other hand, the SMC associated with the reflective indicators involve a single relationship equivalent to variance explained in regression analysis and are commonly obtained by squaring the standardized regression weights. For example, the standardized regression weight $(\beta)$ of Listen1 is 0.70 and $\beta^{2}=0.49$. The SMC of 0.49 for Listen 1 means that the factor PRETEST explains 49.0 per cent of the variance of Listen1. More importantly, however, these so called 'communalities' can be used as a gauge of the adequacy of a reflective indicator as a contributor to the latent variable. Table 15.1 shows that the three average $\mathrm{R}^{2}$ values in the measurement model are $>0.50$, and indicate that the manifest variates reflect the latent variables well.

The Goodness-of-fit Statistics for the original model analysis show that the fitted model has a $\chi^{2}$ fit statistic of 312.2 with a p-value for the $\chi^{2}$ index of 0.000 and with 24 degrees of freedom (df). This result suggests, however, that the model is not a good fitting model.

The Standardized Residual Covariances, as shown in Table 15.2, that are obtained by calculating the difference between the original covariances, and the estimated or implied covariances following the initial stage of estimation of the parameters of the model indicate that some of the standardized residuals are greater than $\pm 1.96$ (approx. 2.00). Table 15.2 shows that the differences between the implied covariances and their corresponding sample covariances, are not all statistically significantly different from zero, and as a consequence indicate whether the model is a good fitting model or not. For example, there is a large residual covariance between Listen1 and Write3 of -3.018. This suggests that the association between these two variables is not being accounted for sufficiently by the model. Therefore, the model may need to be respecified in such a way as to take better into account this association between the two variables.

Table 15.2 Standardized Residual Covariances

|  | Listen1 | Write1 | Read1 | Read3 | Write3 | Listen3 | Read2 | Write2 | Listen2 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Listen1 | .000 |  |  |  |  |  |  |  |  |
| Write1 | -.554 | .000 |  |  |  |  |  |  |  |
| Read1 | -.375 | .727 | .000 |  |  |  |  |  |  |
| Read3 | .906 | .704 | 2.593 | .000 |  |  |  |  |  |
| Write3 | -3.018 | -1.341 | -2.353 | .724 | .000 |  |  |  |  |
| Listen3 | 2.624 | -.142 | .436 | -1.271 | .531 | .000 |  |  |  |
| Read2 | -.892 | -2.246 | -.529 | 2.976 | -2.187 | .949 | .000 |  |  |
| Write2 | -.146 | 1.689 | -.046 | .701 | -.457 | -1.523 | .452 | .000 |  |
| Listen2 | 3.417 | -1.213 | -.983 | 1.057 | -3.844 | 3.367 | .431 | -.516 | .000 |

In order to specify more adequately the model, it is the investigator's task to use the critical ratio's (t-values), to evaluate the standardized residuals as well as to make judgements about model improvements based on the modification indices that are provided by the AMOS computer program. The section that follows explains several general rules that need to be followed in respecifying a model.

## Model Re-Specification

Before model re-specification is undertaken, several general rules can be stated.

1. Parameters that are estimated need to have strong rationales based on theory, the researcher's logical thinking or the researcher's experience. Unfortunately, the last alternative is only able to be done by a researcher who has considerable expertise in this field (an experienced researcher). Beginner researchers can consult and obtain advice as well as undertake a large number of trial and error runs, or use information from previously reported analyses.
2. There is a reasonable expectation, after examining the original (hypothesised) model, a small number of changes need to be made to the model.
3. Careful consideration needs to be given by making only one change at a time and ensuring that each change is meaningful and theoretically sound.

The results of the original model analysis as shown in Table 15.1 suggest that the path from PRETEST to ELPT can be removed from the model since this produces the critical ratio ( t -value) of less than 1.96. Removing any path may mean taking the variable out of the analysis. However, experience shows that removing the suggested path does not necessarily solve a problem, since this is not the only change that needs to be made. Model re-specification involves consideration of alternative procedures.

If the path from PRETEST to ELPT is removed, the results show that the fitted model has a $\chi^{2}$ fit statistic of 315.3 . A $\chi^{2}$ (chi-square) of 315.3 with 25 degrees of freedom has a $p$-value of 0.000 . Since the $p$ value is less than 0.05 ( $p<0.05$ ) this suggests that the model is still not a good fitting model. Consequently, because one of the purposes of the model is to examine and to compare the effects of treatment and the course, the path from PRETEST to ELPT is left in the model. Unfortunately, the chi-square test of model fit is very sensitive to sample size.

Consequently, it is necessary to turn to other descriptive fit statistics in order to assess the overall fit of a model to the data. Therefore, under these circumstances and only after many trial and error runs as well as by considering the values of other fit statistics, is it possible to claim that a particular model is better than another previous model by a substantial amount. For this reason, it must be argued that the particular model presented is the most parsimonious and the best fitting model because this model performs well in comparisons with all other models in terms of both empirical data and theory. The output of the AMOS program presents modification indices that can be used to assess a potential source of model mis-specification as this is useful information for respecifying or changing the original model. The section that follows describes briefly how modification indices can be used in the respecifying of the model under examination. More information about the use of modification indices is presented in Appendix 15.A on Modification Indices.

Table 15.3 records a selection of the modification indices available for use to respecify the model before the best model is obtained. Table 15.3 also shows that there are nine specific modification indices that are selected for use in the process of model re-specification to select the best fitting model during the trimming of the model three times. A selection of the highest modification indices is likely to improve the fit between $\Sigma$ and S since the modification indices and parameter change values are for relationships that are not specified in the original model.

Table 15.3 The Use of Modification Indices and Expected Parameter Change to Select the Final Model

|  | Original Model |  |
| :--- | :---: | :---: |
| Covariance | Modification Indices | Expected Parameter change |
| e4<--> e7 | 67.043 | 3.485 |
| e1<--> e4 | 52.885 | 2.618 |
| e1<--> e7 | 32.707 | 2.205 |
| e5<--> e8 | 15.269 | 1.860 |
| e2<--> e5 | 14.839 | 1.523 |
| e6<--> e9 | 8.026 | 1.115 |
| e6<--> e7 | 10.224 | 1.209 |


| e4<--> e9 | 10.429 | 1.349 |
| :--- | :---: | :--- |
| e3<--> e9 | 8.976 | 1.301 |

The modification indices and expected parameter change statistics for the original model recorded in Table 15.3 indicate that the largest modification index is for an omitted parameter (Listen2, Listen3 = 67.043), with the corresponding expected parameter change statistic equal to 3.485 . In the process of increasing fit of the specified model, the modification indices reveal that an improvement may be obtained, if with respect to the latent variable, NOSTIC, the residual for variate Listen2 (referring to the scores of students in Listening at Time 2), is allowed to correlate with the residual for variate Listen3 (referring to the score of students in Listening at Time 3) as this reduces the chi-square by at least 67.043 . The number 3.485 in the Parameter Change column as is recorded in Table 13.3 indicates that the covariance will increase by about 3.485 if it is allowed to take on the most appropriate value.

Similarly, if the residual for the score of students in Listening at Time 1 for the variate Listen1 is permitted to correlate with the residual of the variate Listen 2 that refers to the score of students in Listening at Time 2, this reduces the chi-square by at least 52.885 with an increase of 2.618 in the value of the parameter. With respect to the PRETEST the residual for variate Listen1 (referring to the score of students in Listening at Time 1) is correlated with the residual for the variate Listen 3 (referring to the score of students in Listening at Time 3). The modification index is 32.707, and the chi-square statistics will drop by at least 32.707 if the covariance between Listen1 and Listen3 is included in the model. The number 2.205 in the Parameter Change column indicates that the covariance will increase by about 2.205 if it is allowed to take on an appropriate value.

Moreover, if the residual for the score of students in Writing at Time 2 for the variate Write $\mathbf{2}$ is permitted to correlate with the residual of the variate Write $\mathbf{3}$ that refers to the score of students in Writing at Time 3, the chi-square is reduced by 15.269 with an increase of 1.860 in the value of the parameter.

A further improvement may be obtained if the residual for the score of students in Writing at Time 1 for the variate Writel is allowed to correlate with the residual of the variate Write2 that refers to the score of students in Writing at Time 2 for the factor NOSTIC. This reduces the chi-square by at least 14.839 with an increase of
1.523 in the value of the parameter. Another improvement may be made if the residual for the score of students in Reading at Time 2 for the variate Read2 for the factor NOSTIC is permitted to correlate with the residual of the variate Read3 that is the score of students in Reading at Time 2 for the factor ELPT. The chi-square is reduced by at least 8.026 with an increase of 1.115 increase in the value of the parameter.

Two interesting results occur in the process of increasing the fit of the specified model when the residual for the variate Read2 is correlated with the residual for the variate Listen3, as well as correlating the residual for the variate Listen2 with the residual for the variate Read3. The modification indices reveal that if the residual for the variate Read2 (referring to the score of students in Reading at Time 2), is allowed to correlate with the residual for the variate Listen3 (referring to the score of students in Listening at Time 3), the chi-square is reduced by 10.224 . The number 1.209 in the Parameter Change column that is recorded in Table 15.3 indicates that the covariance will increase by about 1.209 if it is allowed to take on an appropriate value.

Furthermore, if the residual for the score of students in Listening at Time 2 for the variate Listen 2 for the variable NOSTIC is permitted to correlate with the residual of the variate Read3 that refers to the score of students in Reading at Time 3 for the variable ELPT, this reduces the chi-square by at least 10.429 with an associated increase of 1.349 in the estimated value of the covariance.

Finally, the information provided on modification indices also records that estimating the relationship between the variate Read1 and the variate Read3 improves the chisquare value by 8.976 with a value of 1.301 for the estimated relationship.

Moreover, the output for the modification indices indicate that there are some regression weights from certain manifest variates for certain factors to other manifest variates in certain variables can be estimated as is recorded in Table 15.4. However, if this is carried out, the meaning of the constructs is changed. For example, freeing the estimation of the path from Listen2 to Write3 improves the chi-square value to 52.028 with an estimated relationship of 0.140. The manifest variates Listen $\mathbf{2}$ is related to the LV NOSTIC construct. If the path from Listen2 is to Write3 is correlated, this implies that the construct NOSTIC is not only reflected by its own
variates, namely, Listen2, Write2, and Read2, but it is also influenced by later factor namely Write3 from another construct. In Structural Equation Modelling (SEM), this does not make sense since this contradicts the structure of SEM itself. Consequently, although the results of modification indices indicate that correlation from one manifest variate to another manifest variate may improve the chi-square value, such a change is not undertaken in this study. Thus a decision is made to ascribe the links to error effects, rather than other possible effects that lack a coherent meaning.

Table 15.4 Regression Weight of Modification Indices
Original Model

| Regression Weight | Modification Indices | Expected Parameter change |
| :--- | :---: | :---: |
| Listen2 $\rightarrow$ Listen3 | 37.39 | 0.11 |
| Listen1 $\rightarrow$ Listen2 | 28.07 | 0.10 |
| Read2 $\rightarrow$ Read3 | 17.79 | 0.09 |
| Write1 $\rightarrow$ Write2 | 13.59 | 0.07 |
| Listen2 $\rightarrow$ Write3 | 52.02 | 0.14 |

The use of modification indices are considered as one way of improving the chisquare value. However, this does not mean that all the estimated modification indices require investigators to follow and correlate one manifest variate to another manifest variate. Careful consideration must be given before relating one variable to another variable is undertaken. In this study, a decision is made not to free one manifest variate in relation to another manifest variate. The results of many trial and error runs indicate that the relationship from one manifest variate to another manifest variate as suggested by the output on modification indices is able to improve the original model into a better fitting model only after all indices suggested are examined. However, it is not necessary to follow all indices suggested if some do not provide a meaningful result. From this discussion, it can be concluded that although relationships between paths may change during in computation, they do not always provide a sound and meaningful result.

## The Final Model

In this investigation although the original model has been specified in advance, the results of the analyses show that the final model still has a large chi-square value, and this is not surprising since chi-square is very sensitive to sample size, since the number of processes involved and the size of the sample are employed in calculating the chi-square value. Nevertheless with a large chi-square value obtained for a large
sample model, the final model can be argued as the best fitting model only by examining other fit indices provided by the goodness-of-fit (GOF) statistics output. Chi-square is only one index that can be used to examine whether adequate model fit is achieved or not, but this is not the single piece of evidence that must be used to indicate whether or not a better fitting model is achieved.

Schumacher and Lomax (1996, p. 120) argued that
Structural equation modelling fit indices have no single statistical test of significance that identifies a correct model given the sample data. In fact, none of the GOF criteria, except $\chi^{2}$, have an associated statistical test of significance.

Therefore, Bollen (1989) concluded that reporting multiple measures is prudent rather than to rely on a single choice since there is a lack of consensus on the best measure of fit. The final specified and identified model of English Language Proficiency is given in Figure 15.2, and is examined in the discussion that follows.


Figure 15.2 The Final Model of English Language Proficiency (without Unstandardized and Standardized Regression Weights) Specified and Identified by the AMOS (version 18.0) Program.

Table 15.5 presents a selection of the fit indices produced by the AMOS computer program. These include indices for assessing absolute model fit, comparative model fit and model parsimony as recommended by Schumacher and Lomax (1996).

More importantly, Table 15.5 compares the fit indices for the original model and the final model. The purpose of presenting this comparison is to show that some processes and procedures have been followed in this study in order to select the best fitting model that is also justified on theoretical grounds. These models produce similar path coefficients, but these models involve distinction in the goodness-of-fit statistics indices with considerable differences.

Table 15.5 A Selection of Fit Measures from AMOS Graphics Output for Assessing Adequacy of Model Fit. ( $\mathrm{N}=1978$ )

| Fit Measure | Original Model | Final Model | Final Indication of Fit |
| :--- | :---: | :---: | :---: |
| Discrepancy $\left(\mathrm{CMIN} / \chi^{2}\right)$ | 312.17 | 64.78 |  |
| Discrepancy / df $\left(\chi^{2} / \mathrm{df}\right)$ | 13.01 | 4.32 |  |
| RMR (SRMR) | $1.11(0.04)$ | $0.70(0.02)$ |  |
| Goodness of fit index (GFI) | 0.97 | 0.99 | A good fitting model |
| Tucker-Lewis Index (TLI) | 0.93 | 0.98 | A good fitting model |
| Comparative fit index (CFI) | 0.95 | 0.99 | A good fitting model |
| Root Mean Square Error of <br> Approximation (RMSEA) | 0.08 | 0.04 | A good fitting model |

After many trial and error runs have been made, the best fitting model is selected and is named as the final model. When the original model and the final model indices are compared, the final model can be identified as the best fitting model with respect to:
a) the final model has a smaller chi-square (64.78) than the original model (312.17);
b) the final model has a smaller normed chi-square (4.32) than the original model (13.01);
c) the goodness-of-fit indices of the final model, namely, GFI (0.99), TLI (0.98) and $\mathrm{CFI}(0.99)$ are satisfactorily greater;
d) the final model has a smaller (0.04) Root Mean Square Error of Approximation (RMSEA) than the original model (0.08); and
e) The final model is a model that has a stronger theoretical basis.

A section about assessing model fit is presented in Appendix 15.1A on Model Fit and Improving Model Fit. This section examines a variety of fit indices which can be used as a guideline for assessing model fit and interpreting the values of fit indices.

In summary then, based on the indices of fit obtained and on the fact that the final model derived in AMOS is similar to that derived through PLSPATH analyses, it can be concluded that, the final model of English Language Proficiency presented in this study can be accepted as fitting the data in a highly satisfactory manner in most respects.

1. All parameter estimates are significantly different from zero, except for the direct path from PRETEST to ELPT. However, it is considered important to leave this path in the model since the purpose is to demonstrate the effects of treatment on English proficiency.
2. The model reproduces the sample covariance matrix well that is recorded in Table 15.6

Table 15.6 Covariance Matrix

|  | Read2 | Write2 | Listen2 | Read3 | Write3 | Listen3 | Listen1 | Write1 | Read1 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Read2 | 21.71 |  |  |  |  |  |  |  |  |
| Write2 | 14.22 | 37.25 |  |  |  |  |  |  |  |
| Listen2 | 12.69 | 19.04 | 30.94 |  |  |  |  |  |  |
| Read3 | 8.50 | $\mathbf{1 1 . 0 5}$ | 10.14 | 32.40 |  |  |  |  |  |
| Write3 | 6.29 | 11.76 | 7.76 | 18.22 | 38.02 |  |  |  |  |
| Listen3 | 8.43 | 10.96 | 13.59 | 16.64 | 21.10 | 35.19 |  |  |  |
| Listen1 | 7.60 | 12.59 | 13.61 | 7.19 | $\mathbf{5 . 5 5}$ | 9.52 | 24.25 |  |  |
| Write1 | 7.85 | 15.73 | 11.99 | 7.98 | 7.70 | 8.68 | 12.95 | 27.43 |  |
| Read1 | 9.62 | 15.59 | 13.20 | 10.05 | $\mathbf{7 . 5 5}$ | 9.87 | 14.19 | 16.94 | 31.51 |

3. The Standardized Residual Covariances presented in Table 15.7 show that only the values of three of Covariances are greater than 1.96. This indicates that the model is a good fitting model. In Table 15.7 the results of the Standardized Residuals after the model is re-specified and recorded in the lower left hand triangle of the table.

Table 15.7 Standardized Residual Covariances after Model Re-Specification

|  | Read2 | Write2 | Listen2 | Read3 | Write3 | Listen3 | Listen1 | Write1 | Read1 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Read2 | .26 |  |  |  |  |  |  |  |  |
| Write2 | -.03 | -.19 |  |  |  |  |  |  |  |
| Listen2 | 1.27 | -.11 | .39 |  |  |  |  |  |  |
| Read3 | 1.04 | $\mathbf{2 . 2 9}$ | .92 | -.05 |  |  |  |  |  |
| Write3 | -.91 | -.85 | -1.88 | .20 | .04 |  |  |  |  |
| Listen3 | .31 | .33 | -.10 | -.86 | .14 | -.15 |  |  |  |
| Listen1 | .35 | .91 | .74 | 1.85 | $\mathbf{- 2 . 4 2}$ | .33 | .15 |  |  |
| Write1 | -1.50 | -.06 | .39 | 1.33 | -1.11 | .64 | .16 | .05 |  |
| Read1 | .04 | .17 | .41 | 1.20 | $\mathbf{- 2 . 2 8}$ | 1.08 | .08 | .39 | .16 |

After examining and assessing model fit, the next section involves a discussion of the results of the AMOS analyses for the relationships between the latent variables and their manifest variates (measurement model), and the relationships between latent variables and other latent variables (structural equation model).

## Measurement Model and Structural Equation Model: Results of Analyses

The purpose of this section is to provide answers to the second and third research questions, (a) how the latent variables are causally linked to their respective manifest variates; and (b) how earlier latent variables are causally linked to later latent variables. After the establishment of an adequate model, an analysis is carried out on (a) the relationships arising between latent variables and the manifest variates (measurement model), (b) the relationships between latent variables and other latent variables (structural equation model) and (c) the relationships between error residuals. The results of the structural equation modelling (SEM) analyses using the AMOS program are presented pictorially in Figures 15.3 and 15.4 and the numerical values are shown numerically in Table 15.8. Figures 15.3 and 15.4 present unstandardized and standardized path coefficient values between latent variables respectively, Table 15.8 records the results of the measurement model, the structural equation model, the indirect and the total effects of the independent variables on the dependent variables both as unstandardized and standardized values for the Model of English Language Proficiency (ELP).


Figure 15.3 Unstandardized Structure of the Final Model of ELP in AMOS


Figure 15.4 Standardized Structure of the Model of ELP in AMOS
Figure 15.5 presents the final model with standardized coefficients recorded. The standardized coefficients can be meaningfully compared within the figure as
indicators of effects (Pedhazur, 1973, 247-251). It is of interest to note that for PRETEST the effect of Read1 is the strongest, for NOSTIC the effect of Write2 is the strongest, and for ELPT the effect of Write3 (0.757) is the strongest. In Figure 15.5 it appears that Write3 and Listen3 have the same effects on ELPT, however their metric or unstandardized effects are different, and the effect of Write3 (1.04) is slightly greater than the effect of Listen3 (1.00). Thus the nature of the performance level of the students changes over time, and the question arises as to whether these changes are the result of teaching in Course 1 and Course 2 on the learning accomplished by the students. This issue is addressed on the sections that follow.

## Measurement Model: Result of Analysis

Prior to the examination of the structural model, the measurement model is assessed and modified. The AMOS program produces the Regression Weights table that displays unstandardized regression coefficients and factor loadings, standard errors of the regression coefficients, t -values and p -values for statistical significance. The standardized regression coefficients which are the loadings are indicators of the effects of the tests on the latent variables of English Language performance and the values of $R^{2}$ that is the explained variance are recorded in the two columns in the right hand side. The standardized coefficients can be interpreted as effect sizes. The rules of thumb to interpret standardized coefficients are (a) effects between 0.00 and 0.20 are categorised as trivial effects, (b) effects between 0.20 and 0.50 are categorised as small effects, (b) effects between 0.50 and 0.80 are considered as medium effects, and (c) effects that are greater than 0.80 are regarded as strong effects (Cohen, 1988).

It is worth noting that although the AMOS program names these estimates as regression weights, and a distinction is made between regression coefficients, which describe a strength of an effect of one variable on another in the structural part of the model, and factor loadings, which describe the strength of the effect of a variate on a reflective latent variable of English language performance at Time 1, 2 and 3. Where the critical ratio ( t$)$ value of a path is less than 2.00 (1.96), the path coefficient is considered not to be statistically significant and is commonly removed from the path model. The same rule is applied to the structural equation model. The values of p in the p column indicate statistical significance. p -values $<0.05$ indicate statistical
significance at the 0.05 level. The results of Measurement and Structural Model analysis with AMOS are presented in Table 15.8.

The Measurement model consists of nine manifest variates (MV), namely Listen1 (score of listening at Time 1), Write1 (score of writing at Time 1), Read1 (score of reading at Time 1), Listen 2 (score of listening at Time 2), Write2 (score of writing at Time 2), Read2 (score of reading at Time 2), Listen3 (score of listening at Time 3), Write3 (score of writing at Time 3), and Read3 (score of reading at Time 3). Relationships between these manifest variates are also examined in this section.

Table 15.8 records the unstandardized loading (l) or weight (b), standard error (se), critical ratio $(t)$, significance ( $p$-value) and standardized loading $(\lambda)$ or weight $(\beta)$ in the measurement model and the structural equation model. The measurement model specifies the relationships between manifest variates and their latent construct. In the measurement model, there are three latent variables each of which are reflected by three manifest variates.

Table 15.8 Measurement and Structural Models for Model of English Language Proficiency (ELP) in AMOS


The three latent variables, namely PRETEST, NOSTIC and ELPT are identified as involving Time 1, Time 2 and Time 3 respectively. These three latent variables and their three manifest variates are reported concurrently in order to examine the relationships between latent variables and their manifest variates.

Table 15.8 shows that for an unstandardized regression weight in the weight (b) column, for example, the coefficient of 0.77 for PRETEST to Listen1 means that for a one unit increase in PRETEST there is a 0.77 unit increase in Listen1. These meanings are also applied for other effects in the measurement model and the unstandardized regression coefficients for the structural equation model (SEM).

For the critical ratio in the $t$ column, Table 15.8 shows that for example, the $t$-value of 22.18 for the effect of PRETEST on NOSTIC (and consequently the p-value is close to zero and represented as $<0.001$ ) means that this standardized coefficient (0.75) is significantly different from zero (at the 0.05 level) and therefore remains in the model. It is noted that the majority of the critical ratios ( t ) are greater than 1.96 so that the estimates are significantly different from zero and thus remain in the model. However, while the value of the critical ratio of NOSTIC to ELPT is 9.26, with a path coefficient of 0.33 , the value of the critical ratio of PRETEST to ELPT is 0.44 , and is not significant. However, this path from PRETEST to ELPT is left in the final model since it provides information on the effects of the treatment of the courses and to compare the magnitude of the effects of treatment between Course 1 and Course 2.

Kline (1998) defined the measurement model as the relationship between the manifest variates and their latent variables. In addition, Garson (2003) recommended that before proceeding to examine the structural equation model a valid measurement model must be achieved. While the results of PLSPATH analysis presented in Chapter 11 validated the outer model (measurement model), it is also of interest, therefore, to examine the outer model using the AMOS Graphics in a confirmatory analysis. Since the measurement model specifies the relationships between latent variables and their manifest variates, the following section discusses each of these particular relationships in greater detail.

## Pretest (PRETEST)

PRETEST is a latent variable that is reflected by three manifest variates, namely, Listen1, Write1, and Read1. It can be seen in Table 15.8 that among the three manifest variates, for the unstandardized loading, Read1 has the coefficient of 1.00 on PRETEST, followed by Write1 and Listen1 with coefficients of 0.91 and 0.77 respectively. This suggests that for a one unit increases for PRETEST to Listen1, Write1, and Read1 will result in increase of $0.77,0.90$ and 1.00 in PRETEST respectively. Moreover, the estimates for the effects of PRETEST on Listen1, Write1, and Read1 are $0.67,0.74$ and 0.76 that are standardized loadings and are equivalent to correlations respectively. For standardized loadings Read1 has the largest effect of 0.76 , followed by Write1 with 0.74 , and Listen1 with the smallest effect of 0.67 . These standardized coefficients can be considered as effect sizes. However, it is important to note that all the effects are the reflective indicators associated with the latent variable PRETEST and are reported as having a strong relationship as is indicated by their effects that are between 0.60 and 0.80 . Moreover, the Squared Multiple Correlations ( $\mathrm{R}^{2}$ ) for the variates Listen1, Write1, and Read1 (associated with the construct PRETEST) are all good indicators of the construct as are given by the values of the Squared Multiple Correlations ( $\mathrm{R}^{2}$ ) or communalities of $0.45,0.55$, and 0.58 respectively.

## Diagnostic Test (NOSTIC)

NOSTIC is a latent variable that is reflected by three manifest variates, namely,
Listen2, Write2, and Read2. Table 15.8 shows that among the three manifest variates, for the unstandardized coefficients Write2 has a coefficient of 1.20 on NOSTIC followed by Listen2 and Read2 with the loadings of 1.00 and 0.74 respectively. Write 2 also has the largest effect on NOSTIC with a standardized loading of 0.78 , followed by Listen 2 and Read2 with effects of 0.72 and 0.64 respectively. These three reflective indicators, namely Listen2, Write2, and Read2, show that they have strong relationships with NOSTIC. Furthermore, the Squared Multiple Correlations ( $\mathrm{R}^{2}$ ) shows that each variate, namely Listen2, Write2, and Read2 on average reflects the latent construct well as is illustrated by the values of Squared Multiple Correlations of $0.52,0.61$, and 0.41 respectively.

## Proficiency (ELPT)

ELPT is a latent variable that is reflected by three manifest variates, namely Listen3, Write3, and Read3. Table 15.8 records that compared to other manifest variates, for unstandardized and standardized coefficients Write3 has the largest relationship with ELPT with the coefficient and effect (1.04 and 0.76), followed by Listen3 and Read3 with the coefficients and effects of 1.00 and 0.76 and 0.86 and 0.68 respectively. However, there are small differences in the effects of the relationships between Write3 and ELPT and the relationship between Listen3 and ELPT. With respect to the standardized regression coefficients, these three manifest variates indicate that they have strong relationships in reflecting the latent variable. In addition, the Squared Multiple Correlations ( $\mathrm{R}^{2}$ ) for the variates, namely, Listen3, Write3, and Read3 (associated with the construct ELPT) of 0.57, 0.57, and 0.46 are all good indicators of the construct.

## Structural Equation Model: Result of Analysis

The structural equation model specifies the relationships between specific latent variables and other latent variables. The structural model consists of three latent variables, namely the scores of students on an English test when they are admitted to the University (PRETEST), the scores of students on the diagnostic test (NOSTIC), and the scores of students on the English Language Proficiency Test (ELPT). In addition, PRETEST refers to performance at Time 1 prior to Course 1, NOSTIC refers to performance at Time 2 prior to Course 2, and ELPT refers to performance at Time 3 for final Proficiency. The effects of measurement and specification errors that are each termed a 'residual' on each of the latent variables are also estimated.

Overall, as shown in Figure 15.5 the LVs PRETEST and NOSTIC are hypothesised to have direct effects on the LV ELPT. In addition to these direct effects, PRETEST is assumed to have an indirect effect on ELPT that operates through NOSTIC with values of 0.26 and 0.25 for the unstandardized and standardized effects respectively. Thus the unstandardized and standardized total effects are 0.49 and 0.47 respectively. It is worth noting that the three latent variables namely PRETEST, NOSTIC, and ELPT have three manifest variates and the effects on these three variables are set in the outward mode and not in the inward mode. Thus,
these latent variables have effects on the variates, rather than the variates influencing the endogenous variables indirectly.

Table 15.8 records the weights, s.e (standard error), $t$-value (critical ratio), p-value, and standardized coefficients for the structural equation model (SEM). For the weights (unstandardized regression weights), for example, the regression coefficient of 0.70 for the effect of PRETEST on NOSTIC indicates that for a one unit increase in PRETEST there is a 0.70 unit increase in NOSTIC. For the critical ratio, for example, the $t$-value of 22.18 for the regression coefficient for the effect of PRETEST on NOSTIC (and consequently the p-value is close to zero and is indicated as $<0.001$ ) means that this standardized coefficient (0.75) is significantly different from zero and thus remains in the model.

## Diagnostic Test (NOSTIC)

In the proposed model presented in Figure 15.1, NOSTIC is hypothesised to be influenced by PRETEST. The results of the structural equation modelling (SEM) analysis show that the unstandardized and standardized regression coefficients for the effect of PRETEST on NOSTIC are 0.70 and 0.75 respectively. For the standardized coefficient, this value of 0.75 indicates that PRETEST has a medium effect on NOSTIC. This implies that students who have higher performance on PRETEST are better performers on NOSTIC. In substantive terms this implies that if the intent is to increase English language proficiency through the use of the Diagnostic test then trying to do so by conducting the English class (Course 1) between PRETEST and NOSTIC appears to have a strong effect that is carried on with the effect of NOSTIC on ELPT as is discussed in the section that follows.

## Proficiency (ELPT)

It is hypothesised in the path model presented in Figure 15.1 that ELPT is influenced by two latent variables, namely, PRETEST and NOSTIC. It can be seen from Table 15.8 that PRETEST has a direct effect on ELPT with the coefficients of 0.23 and 0.22 for the unstandardized and the standardized coefficients respectively. These are said to involve a weak effect, but the effect is positive although not statistically significant. This indicates that students who have higher scores in PRETEST are more likely to have higher scores in ELPT. In other words, this states that students who are higher achievers in PRETEST are more likely to be better performers in

ELPT. In substantive terms this implies that if the intent is to lift English Language Proficiency results then trying to do so without conducting the English classes (Course 1 and Course 2) appear to have only a weak direct effect. The provision of the English classes, however, has a significant indirect effect that is mediated by the effect of NOSTIC, since NOSTIC also has a stronger direct effect on ELPT with the regression coefficients of 0.37 and 0.33 for both unstandardized and standardized coefficients respectively. These values are considered to be moderate effects. In substantive terms this suggests that if the intention is to improve English Language Proficiency results then trying to do so by conducting the second English class (Course 2) has further moderate effects. This also reveals that students who take the first and second English courses have higher levels of performance than students who do not take English classes as is indicated by the values of the effects of Course 1 and Course 2 through the regression coefficients that are recorded in the model.

## The Indirect Effect of PRETEST on ELPT through NOSTIC

Thus, in addition to having a direct effect on NOSTIC, PRETEST has an indirect effect on ELPT with the effects of 0.26 and 0.25 for the unstandardized regression weight and the standardized path coefficient respectively. The Indirect effect (0.26) is the product of the regression coefficient for the path (PRETEST $\longrightarrow$ NOSTIC (0.70) X NOSTIC $\longrightarrow$ ELPT ( 0.37 )) since $0.70 \times 0.37=0.26$. The indirect effect of 0.25 for standardized regression weight is categorised as being a weak effect. Moreover, PRETEST has a total effect of 0.49 on ELPT which indicates that a one unit increase in PRETEST causes a total increase in ELPT of 0.49. This total effect is equivalent to the sum of the Direct Effect ( 0.23 ) and the Indirect Effect (0.26). The direct effect ( 0.23 ) is the regression coefficient (from the unstandardized regression weights table from the AMOS program) for the path PRETEST $\longrightarrow$ ELPT that is recorded in two decimal points. Finally, PRETEST has the standardized total effect of 0.47 which means that for a one standard deviation increase in PRETEST there is a 0.47 increase in ELPT. This is made up of a standardized direct effect of 0.22 plus a standardized indirect effect of 0.25 . This value, 0.47 , indicates larger effect.

## Changes Over Time and the Effect of Treatment on Proficiency

In order to answer the research questions: (a) are there any changes in the magnitudes of effects from Time 1, Time 2 to Time 3; and (b) how does the treatment provided on Course 1 and Course 2 have effects on proficiency, this section discusses the changes over time and the effects of the specific treatment on proficiency.

After assessing model fit and discussing the relationships between latent variables and manifest variates, and the relationships between latent variables and other latent variables, it is of considerable interest to discuss whether or not the courses and treatments have had effects on English Language Proficiency. There are two courses provided by the University under survey that are reported as Course 1 and Course 2. Theoretically as stated in the English syllabus, Course 1 emphasizes reading. However, in practice the emphasis in the teaching of Course 1 is formally on the structure and grammar of writing, with limited practice provided in the development of reading skills. Course 1 is conducted between Time 1 and Time 2 when PRETEST and NOSTIC are respectively administered. While NOSTIC is a test that is conducted at the beginning of Course 2, Course 2 is conducted between Time 2 and Time 3 when the testing with NOSTIC and ELPT occur. ELPT is the final test after students are taught in Course 2. The results of interviews with lecturers and focus group discussions with students presented in Chapters 10 and 11 indicate that students have opportunities to learn a variety of skills of the English language as well as knowledge of language both in Course 1 and Course 2. It is reported in Chapter 11 that students have opportunities to learn listening, reading, writing (grammar and structure), vocabulary, and speaking (presentation) in Course 1. In Courses 2 through its emphasis on language proficiency, the students are also taught integrated skills that cover the structure and grammar of writing, listening, and the advancement of reading skills.

Table 15.9 records the results of the effects of courses and treatments provided between Time 1 and Time 2, and between Time 2 and Time 3. These results are discussed and explained in the section that follows.


## Change Over Time and the Effects of the Course PRETEST (Time 1) to NOSTIC (Time 2)

Table 15.9 records that PRETEST is reflected by three manifest variates, Listen1, Write1, and Read1. Listen2, Write2, and Read2 reflect the LV NOSTIC, while ELPT is reflected by Listen3, Write3, and Read3. PRETEST is related to Time 1 and NOSTIC is related to Time 2. Table 15.9 presents the effects of treatment (courses) on proficiency using AMOS analysis. Changes in Effects recorded between Time 1 and Time 2 are attributed to Course 1 , and changes in effects recorded between Time 2 and Time 3 are attributed to Course 2. Moreover, differences in changes in the effects associated with Listening, Writing and Reading, are attributed to the differences in the conduct of Course 1 and Course 2.

It can be seen clearly from Table 15.9 that there is an increase in the values of unstandardized and standardized coefficients from Time 1 to Time 2 of 0.23 and 0.05 respectively for Listening. This value increases from 0.77 to 1.00 for the unstandardized coefficient and from 0.67 to 0.72 for the standardized coefficient. Similarly, there is also an increase in the value of unstandardized and standardized coefficients from Write1 to Write2 of 0.29 and 0.04 respectively. However, a decrease occurs in the values between Read1 and Read2 of -0.26 and -0.12 both for the unstandardized ( -0.26 ) and the standardized coefficients ( -0.12 ). Among other skills, Listening has the largest effect from Time 1 to Time 2 for the standardized coefficient with an increase of 0.23 for the unstandardized effect and 0.05 for the
standardized effect. This appears to be a result of the impact of the additional course in listening that is conducted in the Language Laboratory from Time 1 to Time 2 which helps students increase their listening scores.

The results of the interviews and focus group discussion presented in Chapter 11 show that there is a course provided in the Language Laboratory on the development of the skills of listening. This indicates that the treatment in the Language Laboratory has effects on listening skill. The large change in loading between Write1 and Write 2 for the unstandardized effect of 0.29 and the lesser standardized effect of 0.04 suggests that the emphasis of the course on the structure and grammar of writing is beneficial, while Read1 and Read2 are set at unity for the unstandardized weight, there is a decrease in the unstandardized coefficient of -0.26 and the standardized effect of -0.12 in spite of the fact that theoretically the emphasis of Course 1 is reading. These results suggest that in the main students are primarily taught the structure and grammar of writing, while they gain in listening skills from the additional course in the Language Laboratory. This is consistent with the results of the interviews and focus group discussion presented in Chapter 11 that indicate that students have opportunities to learn the structure and grammar of writing through listening and reading. This suggests that students have more opportunities to learn grammar and structure than reading that consequently leads to a relative decline in their performance in reading. Students have more time to learn grammar and structure since it is learnt through another skill. Moreover, the larger change in loading for listening than for writing does not indicate that the emphasis of Course 1 is actually on listening. This is only part of the efforts taken by lecturers in the way they teach listening, and students' efforts to improve their listening skills in order to help them to improve their performance in listening through practice in the language laboratory. However, the larger change in loading for writing (grammar and structure) than for reading does indicate that Course 1 focuses on the structure and grammar of writing as is indicated by the way the lecturers teach grammar and structure, and the opportunities to learn grammar and structure that are provided by lecturers. More importantly, these results are consistent with the results of the PLSPATH analysis presented in Chapter 13.

## NOSTIC (Time 2) to ELPT (Time 3)

Table 15.9 also records that the value of the standardized coefficient from Listen2 to
Listen 3 shows an increases of 0.04 . However, there is a decrease in the value of the unstandardized and the standardized coefficients from Write2 to Write3 of -0.16 and -0.02 respectively. This result is consistent with the results of the interviews and focus group discussion presented in Chapter 11 that show that because of many patterns of grammar and structure to be learnt and remembered, these patterns confuse students and lead to a decrease in the structure and grammar of writing coefficient. In addition, the decrease in the coefficients of writing can also be interpreted that students underestimate grammar and structure since they have learnt grammar and structure for years. This is one of the characteristics of learning English where English is learnt as a foreign language. In this setting, the teaching and learning of English is focused more on form than on use. Therefore, because of underestimating the knowledge of language that has been learnt for years, students are not able to do well as may be expected on a grammar and structure test.

However, there is an increase in the values of the unstandardized and the standardized coefficients from Read2 to Read3 of 0.12 and 0.04 respectively. These results show that instruction in Listening and Reading has effects from Time 2 to Time 3. This also suggests that the instruction of the course emphasises the teaching of listening and reading from Time 2 to Time 3. This also indicates that Course 2 has greater effects on Listening and Reading than on Writing. This is consistent with the results of interviews and focus group discussion presented in Chapter 11. Moreover, this is consistent with the result of the PLSPATH analysis presented in Chapter 13. Further detail on the effects from Time 2 to Time 3 on Listening and Reading skills are discussed in Chapter 13.

Table 15.10 presents and Figure 15.5 present a summary of the standardized loadings of the three components in the outward mode using AMOS. Table 15.10 records that the effects of treatment can rise or fall under different conditions that are seemingly related to the emphasis of the instruction provided in the Courses.

Table 15.10 Summary of the Standardized Loadings of the Three Components in the Outward Mode

| Mode | Loadings | T1 | Course 1 | Effect | T2 | Course 2 | Effect | T3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Outward |  |  |  |  |  |  |  |  |
| Mode | Listening | 0.67 | Strong Treatment | rise | 0.72 | Medium Treatment | rise | 0.76 |
|  | Writing | 0.74 | Medium Treatment | rise | 0.78 | Weak Treatment | drop | 0.76 |
|  | Reading | 0.76 | Weak Treatment | drop | 0.64 | Strong Treatment | rise | 0.68 |

Table 15.10 shows that for Listening, the treatment has positive effects from T1 to T2 and from T2 to T3. For Writing, the treatment has a positive effect only from Time 1 to Time 2. For Reading, the treatment results in a negative effect from Time 1 and Time 2, but the treatment has a positive effect from Time 2 to Time 3 .

The growth of learning over time from Time 1, to Time 2, to Time 3 for Listening, Reading, and Writing skills and their contributions to the latent variable is illustrated in Figure 15.6.


Figure 15.5 Change Over Time for Listening, Reading, and Writing and their Contributions to the Latent Variable.

Figure 15.6 shows that Listening skill in its contribution to English Foreign Language Proficiency continues to increase from Time 1, to Time 2, and to Time 3. However, Writing skill increases between Time 1 and Time 2 in its contribution, but drops from Time 2 to Time 3, Reading drops from Time 1 to Time 2, but increases in its contribution from Time 2 to Time 3.

## Summary

This chapter assesses English Foreign Language Proficiency as a single entity following up the approach of assessing English as separate skills that is presented in Chapter 14. However, this structural equation modelling (SEM) analysis is also conducted to assess the predictive and explanatory power of a proposed model
referred to as the 'Hypothesised Model' or 'Original Model' as part of a confirmatory process following up the model building discussed in Chapter 13 (PLSPATH) that is of a more exploratory nature. This approach to assessment has produced a re-specified model called 'The Final Model of English Foreign Language Proficiency' that is more rigorously tested using IRT-scaled scores in this chapter. Different goodness-of-fit statistics are used to assess whether or not the model fits the data well. These results of the goodness-of-fit statistics that provide empirical evidence are used to test whether the explanatory power of the proposed and refined models are adequate.

Similar to the model analysed using the PLSPATH computer program, the model under study involves three latent variables, namely, PRETEST, NOSTIC and ELPT that are identified as occurring at Time 1, Time 2, and Time 3 respectively. Each of these latent variables involves three manifest variates namely: (a) Listen1, Write1, and Read1 as reflective indicators of the PRETEST construct; (b) Listen2, Write2, and Read2 as reflective indicators of the NOSTIC construct; and (c) Listen3, Write3, and Read3 as reflective indicators of the ELPT construct.

By comparing the results of PLSPATH analysis presented in Chapter 13 and the results of AMOS analyses presented in Chapter 15, the final model examined and derived in AMOS is consistent with those derived through PLSPATH analyses in several respects.

1. All of the reflective indicators show that they are measuring their constructs well as is indicated by the values of their strong loadings to their constructs (outer model).
2. All of the manifest variates behave as expected, since they are contributing positively to the latent variables, namely, PRETEST, NOSTIC, and ELPT, although there are differences in the strongest loadings over time. However, reading is the biggest loading at Time 1 in the results of the PLSPATH and AMOS analyses.
3. The causal relationships operating between the latent variables namely, from PRETEST to NOSTIC and from NOSTIC to ELPT are coherent and meaningful.
4. Both models produced by the PLSPATH and the AMOS program show that there is a small direct relationship between PRETEST and ELPT,
nevertheless the effects are positive. However, PRETEST has an indirect effect.
5. The results of change over time and the effects of treatment on English proficiency using AMOS Graphics yields a similar pattern to those results obtained from the PLSPATH analyses
6. Moreover, there are some interesting findings as a result of the confirmatory analysis. In the outer model (measurement model) for the factor PRETEST (Time 1), Reading1 has the strongest factor loading among the manifest variates, Listen 1 and Write1. Thus Reading has the biggest contribution to reflecting the factor PRETEST. This is possibly because PRETEST is conducted when students first enter the university, and the emphasis of English instruction in high school is on Reading. Therefore, it is not surprising that reading produces the strongest factor loading.

The final model also indicates the increase in the loadings between Listen1 and Listen2. This implies that the listening treatment that is conducted between Time 1 and Time 2 in Course 1 helps students improve their listening skill as is indicated by the increase in the values of the loadings. Teachers may also encourage students to use the resources provided by the university since they can use them freely and without charge. This result also provides another indication that students may get more practice by themselves in order to improve their listening skills from Time 1 to Time 2. There is also an increase in the listening score between Time 2 and Time 3 possibly by listening in courses given in English. Writing scores increase between Time 1 and Time 2, but there is a decrease on Writing between Time 2 and Time 3. Thus Course 1 has more effects on Listening and Writing between Time 1 and Time 2, but Course 2 has more effects on Listening and Reading between T2 and T3.

Overall, although the AMOS model presented in Table 15.5 is only one of many possible models, this model is examined in several different ways until the best selected model based on a theoretical rationale is achieved. All fit indices in this final model are exceedingly favourable and strongly indicate that the model corresponds extremely well to the data and represents an excellent overall result for the proposed model of English Language Proficiency. However, this does not say that the model cannot be improved. Much hard work is required to improve the model until a final decision is made to select the best model among excellent models. More importantly,
this is not the so-called 'true' model that is estimated. There is no 'true' model. This is probably the best model obtained after selecting several alternative models and assessing the best fit that the model has. If only a single model is tested, there is the danger of accepting this model as the final model when, in fact, alternative models may provide a better representation of the data.

## Is English Foreign Language Proficiency Better Measured as Separate Skills or as Whole Entity?

As a result of issues raised in Chapter 14, (a) is it better to measure English Language Proficiency by treating the components of listening, reading and writing as separate entities? or (b) is it better to measure English Language Proficiency by combining listening, writing, and reading as one entity?. The results of measuring English Language Proficiency as one entity presented in Chapter 15 shows that the value of the RMSEA (Root Mean Square Error Approximation= 0.041 ) is larger than the value of RMSEA (0.013) when measuring English Language Proficiency as separate entities. However, this finding does not establish that measuring English Language proficiency as separate entities is necessarily better that measuring English Language proficiency as one entity. This is because each mode of instruction has its own objectives and has different effects. Further consideration of the differences between the two approaches involves conceptualising English Language Proficiency that is discussed in the final chapter.

## CHAPTER 16 TOWARDS PROFICIENCY IN LEARNING ENGLISH AS A FOREIGN LANGUAGE IN A GLOBAL SETtING

## Introduction

This investigation is concerned with the learning of English as a foreign language in an Asian country at the university level in Indonesia. A question must now be asked. How many people in Asian countries are proficient in the use of English as a foreign language? Most people in these countries are likely to answer 'not many'. This may be caused by the status of the language in these countries being that of a foreign language, and is supported by the fact that access to opportunities for learning the language not being readily available in these countries. Even if students have had some experience in learning English as a foreign language, learning takes place at a faster rate for some students and a slower rate for others. There must be reasons why some students are quicker and better at learning English as a foreign language, while others are not.

Many studies have been undertaken that are concerned with the factors that contribute toward obtaining English language proficiency. However, relatively little research has been done, particularly in the learning of English as a foreign language, since these studies are mostly conducted in Western English speaking countries, and are not extended to developing countries, or are undertaken in the setting of English as a first or second language, and not as a foreign language. Furthermore, there has been no study conducted in examining the effects of the methods of student selection for the learning of English Foreign Language proficiency and students' general learning outcomes assessed by a Grade Point Average (GPA) at the university level where the course undertaken is not a 'major' in learning a foreign language.

This study investigates the many factors, including mode of student selection, and financial support that influence the acquisition of English Foreign Language Proficiency in a developing country, namely Indonesia. Moreover, this study examines growth over time, and whether English language proficiency is considered to be a single entity or several separate skills. Other issues include whether the results of the study are meaningful for the learning of English as a foreign language not only in Indonesia but also in surrounding Asian countries. In addition, there is the
issue of whether the results of the study contribute to the body of knowledge about language learning and how the results of the study can be used to shape policy for the better learning of English as a foreign language in the future. This present investigation is designed to be a policy-oriented research study and seeks to address such questions, which are of considerable importance to a very large number of the many billion people who today, live in Asia, where the English language is rapidly establishing itself as the so-called 'global language.' However, this study is limited to one Asian country and is conducted in only one university. The purpose of this chapter is to answer the issues raised in Chapter 1 together with the research questions presented in Chapter 6. It draws together the findings of the evidence from the use of the measurement strategies with data from University files and the verbal reports obtained from the interviews.

## Focus of the Study

A brief introduction to the issues involved in this study is provided in Chapter 1 and 10 key research questions are presented in Chapter 6. From the discussion in Chapters 2 to 4 of the context of the study and factors that are believed to influence the attainment of English Foreign Language Proficiency, Carroll's model of foreign language learning emerges as the major theory that underpins the field of inquiry and is advanced in Chapter 5. The conceptual framework of the structure of English Foreign Language Proficiency, and the design and operation of the study as well as the characteristics of the students involved are presented in Chapters 6, 7, and 8 respectively. Chapters 9,10 , and 11 are concerned with the results of the interviews with the teachers of the selected students and the focus group discussions with a sample of the students themselves. The results obtained from the examination and estimation of the student-level path model of the factors that influence English Foreign Language Proficiency and the students' learning outcome of the Grade Point Average (GPA) are presented in Chapters 12 and 13. Research findings are also presented in Chapters 14 and 15, in which models of English Language Proficiency as a single entity and as three separate skills are examined and the parameters of the models are estimated. Changes over time in English language performance as the result of the courses conducted in the University under investigation are also examined in these penultimate chapters.

The many findings of this investigation are presented in the sections that follow with respect to the ten key research questions and the four major issues that are addressed in this study. In addition, policy recommendations are advanced. The closing pages of this chapter focus on the learning of English in a global setting.

## Discussion of the Findings

The first section that follows discusses the findings from the results of the analysis of the interviews and the focus group discussions with the participants in this study. Hence, the discussion of research findings presented in this section is limited to only those involving specific research questions that are raised in the study.

As mentioned above, however, the research questions of the study are grouped and based on four specific issues, namely, (1) the issue of factors that influence student English Foreign Language Proficiency and student learning outcomes, (2) the issue of change over time, (3) the issue of the better teaching of English, and (4) the issue of shaping policies for improving the learning of English and for future research, in the Indonesian University, and in other Asian Universities, as well as the application of findings to other Asian countries. An amalgamation of the research questions and the research issues of the study are summarized in Table 16.1.

Table 16.1 Grouping the Research Issues with their Research Questions

| No. | General Research Issues | Key Research Questions | Phase |  | Course |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Phase 1 | Phase 2 |  |  |
|  |  |  | General Cases (Data File/ Information) | Particular Cases (Interview Information) | Course 1 | Course 2 |
| 1. | Factors of Influence Questions 1, 2, 3 | - Participant views <br> - Direct and Indirect Effects <br> - Student outcomes | major | major | $\checkmark$ | $\checkmark$ |
| 2. | Change in <br> Performance <br> Questions 4, 5, 6, 7, <br> 8 | -Course Structure <br> - Time <br> - Form or Reflection <br> - Interacting Entities <br> -Treatment Effects | major | minor | $\checkmark$ | $\checkmark$ |
| 3. | Language Teaching Question 9 | - Nature of Entity | major | minor | $\checkmark$ | $\checkmark$ |
| 4. | Shaping Policy Question 10 | - Theoretical and Policy Implications | major | major | $\checkmark$ | $\checkmark$ |

## Issue 1: Factors of Influence

## What Factors Influence Student English Foreign Language Proficiency and the Student Learning Outcomes that are Achieved during the Course Provided by the University?

The first issue is related to Research Questions 1 to 3 concerning (a) lecturers' and students' views about the learning of English as a foreign language, (b) factors that influence the attainment of English Foreign Language Proficiency by the students, and (c) factors that influence student Grade Point Average at the University. Table16.1 shows that the ten research questions that are classified are based on the research issues of interest. Therefore, in answering these research questions, the research issues are used to provide the focus for each group of underlying research questions.

## Q1. Participant Views

## What are the Lecturers' of English and Students' views Concerning the Learning of English as a Foreign Language at the University?

Information obtained from the results of individual interviews with six lecturers and focus group discussions with 29 students (see Chapters 9 and 10) indicates that different people have different experiences in the learning of English as a foreign language, although there are also many similarities and many experiences in common. Carroll ( 1963 ; 1967) identified five factors that contributed to the success of learning English as a foreign language. The factors were (a) aptitude, (b) perseverance and motivation, (c) opportunity to learn, (d) ability to understand instruction, and (e) quality of instruction.

## Aptitude or the Speed in Language Learning

In this study, it is found that there are many similarities as well as many differences with regard to how easy or hard the respondents find the learning of English as a foreign language. The lecturers report that knowledge of the language in terms of grammar and structure, vocabulary, and attitudes, including enjoyment contribute to speed in English language learning. This indicates that if students understand grammatical knowledge, have a rich vocabulary, and enjoy and are motivated towards learning English, they are more likely to succeed readily in learning English as a foreign language. Moreover, students have similar views to those of their
lecturers, although the students add information that is not given by the lecturers, since, ability to understand pronunciation also helps the learners find it easier to learn English.

Furthermore, both the lecturers and the students report that in addition to the factors of linguistics, such as vocabularies, pronunciation, grammar and structure, there are other factors that also contribute to aptitude. They are, self-efficacy, self-teaching, parental support, practice in different contexts, length of practice, status of the language, availability of an English speaking friend, supportive environment, access to resources, availability of teacher, and initiative, although speaking like a native is not demanded. An important and interesting finding is that technology is a useful tool to help learners learn English more easily.

## Perseverance and Motivation

With respect to perseverance and motivation in learning English, it is found that there are also similarities among lecturers and students concerning why it is necessary to learn English. It is necessary to learn English because of (a) economic reasons such as global markets, more opportunities to work in trans-national companies, and opportunities to work in a country where English is widely used, (b) the status of English as a global language, (c) access to knowledge such as international journal publications that are written in English, (d) educational reasons such as university internationalization, and opportunities to study overseas, and (e) international travelling.

Furthermore, the advancement of Information and Communication Technologies (ICT) is an important reason why it is necessary to learn English. It is found that English is the key language to access information and technology. There is no doubt that there is a strong relationship between the use of the English language and access to technology.

Interestingly, students add that globalization is another reason why it is necessary to learn English. Globalization requires that a common language is in operation in order to communicate with people from different countries and different cultures. Thus it is important to learn English since people are now living in a so-called 'global world', and English is becoming the common language. In spite of many difficulties it is necessary to persevere.

## Opportunity to Learn

In this study, it is found that both lecturers and students have had an opportunity to learn English from both formal learning such as is provided at school, and from nonformal learning by taking private English courses and meeting English speaking people or reading English based material. This is because the status of the English language is not as a second language, but purely as a foreign language. Thus English is a language that is learnt formally in the classroom setting, accompanied by the availability of a teacher and the correction of errors. Since the opportunity to learn the English language is limited, it is seen to be desirable to have additional nonformal learning in the form of a special English course or privately with English based activities. Moreover, it is found that students, who have had limited opportunities to learn English from formal learning in a high school as well as nonformal learning for economic reasons, need to engage in autodidactic learning. They need to teach themselves English from books and newspapers, and through the use of multimodal technology, such as the opportunities provided to access a language laboratory.

## Quality of Instruction

In terms of quality of instruction, it is found that according to the lecturers and the students, there are several ways that lecturers can assist their students to learn English. They are (a) using the combination of Bahasa Indonesia and English as the language of instruction, (b) providing a variety of teaching methods, (c) employing motivational strategies, (d) providing consultation time, and (e) providing handed-out notes written in English.

Moreover, students suggest that it is better for lecturers to have access to professional development programs, such as a workshop. Students expect that lecturers keep updating their knowledge and language proficiency, and that in turn they are able to help their students to learn English more readily. Lecturers also state that it is necessary to set out at the first meeting their expectations in order that students are aware of what their lecturers expect from them.

## Ability to Understand Instruction

It is found that there are a variety of ways in which learning can be adapted in order to meet the needs of each student. Both lecturers and students emphasize that more time to learn and more opportunity to learn English must be considered. Intervention or specific treatment, in terms of extra time, needs to be given to students who have lower and different levels of English language skills.

Moreover, there are differences in the ways that students can be grouped in classes. On the one hand, some lecturers consider that students need to be grouped according to their ability, and this in turn can influence the sort of curriculum content and teaching given. Students, on the other hand, express the view that mixed ability groups are better. They argue that consideration of little or no discrimination between students, as well as the sharing of knowledge and skills between students with high, medium, and low levels of English proficiency are much more important than grouping by ability only.

## Technology and Learning English as a Foreign Language

One factor, namely, the use of multimedia technology, must be added to the five factors given above in Carroll's Model of foreign language learning. Undoubtedly we live in the era of Information and Communication Technologies (ICT). Evidencebased findings (Nallaya, 2013) strongly support a close relationship between the use of English and technology. Therefore, it is meaningful and necessary to examine in this study the importance of the use of technology in learning English, particularly where the status of English is that of a foreign language.

It is found that students, in particular, argue that technology helps learners to learn English easily. This information is an important additional aspect when English is learnt in a country where the first and the second languages are not English, which means that English is not normally spoken in the country. One way to assist learners to learn English is by learning English through the use of multimedia technology. The availability of multimedia technology helps learners to have an indirect interaction with native speakers of English through reading and listening to authentic materials, and chatting to pen-pals through the internet, as well as accessing international journals, newspapers and magazines with the latest information written in English.

It is found from the results of the interviews that technology helps learners to improve their reading, listening, writing, and speaking skills in a variety of ways. This finding suggests that access to multimedia technology needs to be provided and widely used in the learning of English.
For lecturers, however, there are some significant obstacles in relation to the use of multimedia technology, such as age, lack of ability to use technology, time to learn, and limited access available or provided. Both lecturers and students report that use or ownership of technology is still expensive.

## Q. 2 Direct and Indirect Effects

## What Factors can be Expected to Have Direct and Indirect Effects on the Learning of English Foreign Language Proficiency at the University?

There are some student factors that have a significant influence on English Foreign Language Proficiency. Six factors, namely sex of student, socio-economic status, student prior achievement, Faculty of Instruction, the score on English 1, and the semester in which students enrol in English 2, are examined in this study.

This investigation employs two main data files as a result of the structure of the original large dataset. The separation of the dataset is undertaken because several variables of interest have considerable missing data. However, these two data files have different numbers of cases: these are 3995 and 1978. The file with a large sample of 3995 cases is given the name 'Grade score sample', while the file with a smaller sample of 1978 cases is given the name 'IRT score sample'. The Grade score sample does not have IRT-scaled scores, while the IRT score sample has both the Grade scores and IRT-scaled scores. Summary of types of sample and scaling employed is given in Table 16.2.
Table 16.2 Samples and Scaling Employed and Compared

| No. | Types of sample | Types of scaled scores available |
| :--- | :--- | :--- |
| 1. | Grade score sample $(\mathrm{N}=3995)$ | Rank-scaled scores |
| 2. | Grade score sample $(\mathrm{N}=1978)$ | ${ }^{\mathrm{a}}$ IRT-scaled scores and Rank- scaled scores |
| 3. | IRT score sample $(\mathrm{N}=1978)$ | IRT-scaled scores |

${ }^{\text {a }}$ IRT $=$ Item Response Theory

The difference between these samples is only in the way that the scores are scaled. The scores are scaled in two different ways, namely, (a) Rank-scaled scoring, and (b)

IRT-scaled scoring. The Grade score sample has a 1 to 4 scale identified as Rankscaled scores, while in the IRT score sample IRT-scaled scores are calibrated with a mean of 50 and a standard deviation of 10 . Therefore, there is an opportunity to replicate the findings with a comparison between the Grade score sample and the IRT score sample with the same number of cases 1978, but with the scores in different forms. Overall, there are three samples employed in this study, namely, (a) Grade score sample with 3995 cases, (b) Grade score sample with 1978 cases, and (c) IRT score sample with 1978 cases.

## Findings from Grade Score Sample and IRT Score Sample

A summary of factors that have an influence on English Foreign Language Proficiency and that are obtained from the three different types of sample is given in Table 16.3.

Table 16.3 Factors that Influence English Foreign Language Proficiency

| Dependent Variable | Grade score sample <br> $(\mathrm{N}=3995)$ |  | Grade score sample <br> $(\mathrm{N}=1978)$ |  | IRT score sample <br> $(\mathrm{N}=1978)$ |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Direct |  | Indirect | Direct | Indirect | Direct | Indirect |
| Endependent |  |  |  |  |  |  |
| Profish Foreign Language |  |  |  |  |  |  |
| GENDER | - | $\diamond$ | - | $\diamond$ | $\bullet$ | $\diamond$ |
| SES | + | $\diamond$ | + | $\diamond$ | + | $\diamond$ |
| PRIOR | + | $\diamond$ | + | $\bullet$ | + | $\Delta$ |
| FACULTY | + | $\diamond$ | + | $\diamond$ | + | $\diamond$ |
| ENGLISH 1 | + | $\diamond$ | + | $\diamond$ | + | $\diamond$ |
| SEMESTER | + | $\diamond$ | + | $\diamond$ | + | $\diamond$ |

-Negative direct relationship; • Having no direct relationship; + Positive direct relationship; $\diamond$ Having no indirect relationship; - Having indirect relationship

## Gender

For the Grade score sample with both 3995 and 1978 cases, it is found that gender (with boys coded ' 0 ', and girls coded ' 1 ') has a negative direct effect on English Foreign Language Proficiency. This relationship records that male students are more likely to have higher levels of English Foreign Language Proficiency than female students. This seems to arise because male students are more likely to attend departments that provide them with more opportunities to interact with English through technology and textbooks written in English than are female students who attend other departments. Textbooks and international journal articles are largely written in English. Under these circumstances, male students are more familiar with

English and this helps them to obtain higher scores on an English Language Proficiency test.

## Socio-economic Status

With respect to socio-economic status, it is found that there are positive direct relationships between socio-economic status and English Foreign Language Proficiency for the three samples, namely, the Grade score sample with 3995 and 1978 cases, and the IRT score sample also with 1978 cases. This relationship can be better stated that the higher the level of parental salary status of the students, the higher the level of students' English Foreign Language Proficiency. This also implies that students from low economic backgrounds have a lower level of English Foreign Language Proficiency. (See Chapter 8 and Appendix 8).

## Faculty

With respect to the Faculty of the students, it is found that there are positive direct relationships between Faculty and students' English Foreign Language Proficiency. These relationships can be linked to the results of mean score comparisons between Faculties. The results indicate that students from the Faculty of Informatics System obtain the highest mean scores. Therefore, from the relationships between Faculty and English Foreign Language Proficiency it can be stated that students from the Faculty of Informatics System are more likely to achieve higher scores in English Foreign Language Proficiency. Furthermore, students from the Faculty of Marine Engineering are more likely to achieve lower scores in English Foreign Language Proficiency

## English 1t Score

It is found that there is a positive relationship between English 1 score and English 2 score. This indicates that students who obtain good scores in English 1, are more likely to perform better on subsequent English Foreign Language Proficiency tests administered during and at the completion of their course.

## Semester

The results show that there are relationships between Semester of taking the final English Foreign Language Proficiency test and the students’ performance. The results indicate that the earlier the semester in which the students enrol in English 2, the better are the students' scores.

## Prior Achievement

It is also found that there are positive direct relationships between students' prior achievement (with respect to Mathematics, Physics, and English at school) and English Foreign Language Proficiency for both the Grade score samples with 3995 and 1978 cases, and the IRT score sample. This suggests that the greater the students' prior achievement, the greater the students’ English Foreign Language Proficiency

Among the six student level factors considered to have an influence on English Foreign Language Proficiency, it is found that Prior Achievement has the strongest relationship with English Foreign Language Proficiency for both the Grade score sample with 3995 cases and IRT score sample with 1978 cases.

## Q3. Student Outcomes

## What Student-Level Factors Influence Student Learning Outcomes on the Grade Point Average (GPA)?

A summary of factors that have a potential influence on the student learning outcome of GPA is given in Table 16.4

Table 16.4 Summary of Factors that Influence GPA

| Dependent Variable | Grade Score Sample (N=3995) |  | IRT Score Sample (N=1978) |  |
| :--- | :---: | :---: | :---: | :---: |
| Independent | Direct | Indirect | Direct |  |

## Gender

With respect to sex of student (Gender), it is found that for the Grade Score Sample there is a positive direct relationship between sex of student and student learning
outcomes. This relationship records that female students are more likely to have higher GPA scores than male students. For the IRT score sample, although gender does not have a direct effect on the student learning outcome of GPA, gender does have a significant indirect effect on the student learning outcomes of the GPA through the Bahasa Indonesia scores.

## Age-End

In terms of the age when students graduate from the University, it is found that there is a negative direct effect between age of student and student learning outcomes for both the Grade Score Sample and the IRT Score Sample. This indicates that younger students are more likely to have higher Grade Point Average scores than older students.

## Socio-Economic Status (SES)

The results of analyses indicate that socio-economic status (SES) does not have a direct effect on the student learning outcomes of GPA for both the Grade Score Sample and the IRT Score Sample. However, SES does have a significant indirect effect on the student learning outcomes of GPA for the IRT Score Sample through method of student selection (SELECT).

## Prior Achievement

It is also found that students' Prior Achievement has the strongest contribution to student Grade Point Average scores for both the Grade score sample and the IRT score sample. The relationship is positive. This indicates that the higher the Prior Achievement that the students have, the higher are the GPA scores that the students obtain. Prior Achievement also has a significant indirect effect on GPA through the scores on English 1t.

## Faculty

With respect to the Faculty of Instruction, there is a positive direct effect between the Faculty of Instruction and student's GPA scores for both the Grade Score Sample and the IRT Score Sample. This relationship implies that students from the Faculty which has the largest mean score are more likely to obtain a high level of GPA score. The results of the criterion scaling (see Chapter 8) show that students from the Faculty of Informatics System Engineering obtain the highest mean score and students from the Faculty of Marine Engineering obtain the lowest mean score.

## Mode of Student Selection (SELECT)

In this study, it is found that the way students are selected is positively associated with student's Grade Point Average. This relationship can be interpreted that students who are selected under scholarship procedures are more likely to have a high level of GPA score. Mode of Student Selection also has an indirect effect on student's GPA scores.

## English 1t score

It is also found that the score of English achievement at the commencement of study has a positive effect on student's GPA score for both the Grade score sample and the IRT score sample. This relationship can be interpreted that the higher the scores of English Achievement that the students have at the beginning of their course, the larger the GPA scores that these students obtain at the end of their course.

## Bahasa Indonesia Scores

In this study it is found that Bahasa Indonesia also contributes positively to student Grade Point Average. This relationship shows that the higher the scores on Bahasa Indonesia that students obtain, the higher the level of GPA that the students have at the end of their course.

## Issue 2: Change of Performance

## Does the Average Level of Student Performance in Listening, Reading, and Writing Change Over Time, and do They Interact? <br> Q4. Course Structure <br> How is the English Course Structured at the University?

This question is addressed by two sub-questions that follow.

## What English is Taught by the University?

In this study, it is found that the University under investigation provides two English courses for students that are identified as English 1c and English 2c. From the results of the interviews with lecturers and the focus group discussions with students, it is found that both English 1c (Course 1) and English 2c (Course 2) courses focus on English for General Academic Purposes. Students are introduced to listening, reading, writing (grammar and structure), and speaking (presentation) in Course 1.

Course 2 focuses on preparing students to sit for the English Foreign Language Proficiency Test.

## How are the Skills of English Taught?

Lecturers teach integrated skills, namely listening, speaking (presentation), writing (structure and written expression), and reading as well as vocabulary in Course 1, while in Course 2 lecturers teach the skills of reading, listening, and writing (structure and written expression). This suggests that lecturers do not focus on one skill only, and the integrated learning of skills in language is provided. This is because when one skill is learnt, it automatically involves another skill, and the focus is not on learning only one skill in using the English language.
It is also found that lecturers employ a variety of teaching strategies in order to help students to learn English easily. Since the skills of using the English language involve some specific strategies, lecturers emphasize these strategies and demonstrate the use of these strategies by practising how and when these strategies need to be employed.

## Q5. Time

## Are there any Interrelationships between Variables Operating at Time

 1, Time 2 and Time 3?This study involves data that are recorded on three different occasions, namely Time 1, Time 2, and Time 3. An exploratory PLSPATH analysis is employed to examine the interrelationship between the variables that are operating. The interrelationships between variables are argued to be influenced by the effects of the courses, namely English 1c (Course 1) and English 2c (Course 2), provided by the University under investigation. English 1c is conducted between Time 1 and Time 2, while English 2c is undertaken between Time 2 and Time 3.

Figures 16.1 ( $a$ and $b$ ) show the change over time in the mean scores for Listening, Writing, and Reading from Time 1 to Time 2, and to Time 3. The results also show the important role of the courses or treatments provided by the University between Time 1 and Time 2 as well as between Time 2 and Time 3 that results in growth over time from Time 1 to Time 2, and to Time 3.

Therefore, the conduct of the courses provided by the University not only enable skills from Time 1 to Time 2 to change but also enable students to achieve better scores in the component skills of English from Time 1 to Time 2, and from Time 2 to Time 3. Performance at Time 3 is of considerable importance since it provides a qualification for graduation.

However, the relationships are neither perfect with an effect of unity (1) nor nonexistent with a path coefficient of zero (0). Thus some students in general improve more and some students improve less than others. Prior performance does not completely determine later performance. The courses are thus having an influence and their effects are recorded in Figures 16.1 (a and b).

Thus, Figures 16.1 ( a and b ) record changes in performance from Time 1 to Time 2, and between Time 2 and Time 3 with respect to the component skills of Listening, Writing and Reading.


Figure 16.1 (a) Comparison of changes in performance of Listening, Writing, and Reading between T1, T2, and T3

Figure 16.1 (b) Grouping changes in performance of Listening, Writing, and Reading over time

Table 16.5 presents the changes in performance with respect to the standardized scores obtained from the IRT scaling of the tests in the United States of America using scales with a mean of 50 and a standard deviation of 10 .

In addition, Table 16.5 and Figures 16.2 (a) and (b) record changes in performance expressed as effect sizes with respect to the mean scores of Listening, Writing, and Reading from Time 1, Time 2, to Time 3.

Table 16.5 Changes in the Mean Scores of the Performance Over Time

|  | $\mathbf{T 1}$ | $\mathbf{T 2}$ | T2-T1 | Standardized Effect Size $^{\mathrm{a}}$ | Cohen Classification $^{\mathrm{b}}$ |
| :--- | :---: | :---: | :---: | :---: | :--- |
| Listening | 40.7 | 46.7 | 6.0 | 0.60 | medium |
| Writing | 41.4 | 42.8 | 1.4 | 0.14 | trivial |
| Reading | 42 | 40.5 | -1.5 | -0.15 | trivial |
|  | $\mathbf{T 2}$ | $\mathbf{T 3}$ | $\mathbf{T 3 - T 2}$ |  |  |
| Listening | 46.7 | 53.9 | 7.2 | 0.72 | medium |
| Writing | 42.8 | 47.3 | 4.5 | 0.45 | small |
| Reading | 40.5 | 47.9 | 7.4 | 0.74 | medium |

${ }^{\text {a }}$ Scales when calibrated are constructed with a mean of 50 and a standard deviation of 10 .
${ }^{\mathrm{b}}$ above 0.8 large; from 0.50 to 0.80 medium; from 0.20 to 0.50 small; from 0.00 to 0.20 trivial.


Figure 16.2 (a) Change in Performance Figure 16.2 (b) Change in Performance recorded as effect

Thus, Table 16.5 and Figures 16.2 ( a and b ) presents changes in the mean scores of the performance of Listening, Writing, and Reading over time and their standardized effect sizes that are also assessed in terms of Cohen's classification of effect sizes.

These changes are discussed separately for each skill in the sections that follow for Question 8.

## Q6. Form or Reflection of Proficiency Performance

Do the Components Operating at Time 1, at Time 2, and at Time 3 Form or Reflect Performance in English Foreign Language Proficiency?

The data recorded on the three different occasions have three component skills, namely Listening, Writing, and Reading. The Time 1 latent variable is PRETEST, the Time 2 latent variable is NOSTIC, while the Time 3 latent variable is ELPT. PRETEST, NOSTIC, and ELPT are argued to be constructs or latent variables. The PLSPATH computer program is employed in Chapter 13 in an exploratory way to examine the models that are constructed in both the inward and outward modes. In the inward mode proficiency is formed from the three skills, while in the outward mode proficiency is reflected by the three skills. Thus the structures of the latent variables in the inward and outward modes need to be examined in order to select the more coherent final model of English Foreign Language Proficiency. After different analyses are conducted (see Chapter 13), the results indicate that English Foreign Language Proficiency can be argued to be better constructed in the reflective or outward mode rather than in the formative or inward mode. Thus PLSPATH generates evidence that the reflective mode provides a more coherent model of the contributions of the three skills of Listening, Writing, and Reading to English Foreign Language Proficiency than does the formative mode in the regression analysis of the contributory effects of the three skills.

However, the estimated contributory effects associated with each of the skills for the inward and outward modes differ between the three occasions. It is argued that these recorded differences are related to the nature of the two Courses, namely, English 1 and English 2 that are conducted at successive stages of the teaching programs provided by the University. In addition, the recorded differences are argued to be related to the integrated nature of the competence of English Foreign Language Proficiency.

## Q7. Interacting Entities

What Changes can Occur in Reading, Writing and Listening Performance at the University, and How do They Interact and are They Related to the Teaching that is Provided?

It is stated in the previous sections that this study employs three measures of skill that interact in English Language Proficiency and they are examined on three different occasions. The three latent variables assessing proficiency are identified as being related to Time; PRETEST at Time 1, NOSTIC at Time 2, and ELPT at Time 3. Each latent variable is reflected by three manifest variates or indicators, namely Listen, Read, and Write. Since there are three outcome variables available and three variates that assess skills, there is an opportunity to examine their contributions to the growth of learning over time. The AMOS computer program is employed to analyse in confirmatory analyses the changes in learning over time, following the use of the PLSPATH computer program in exploratory analyses. The changes in the contributions to proficiency over time from Time 1, to Time 2, to Time 3 for Listening, Reading, and Writing skills are illustrated in Figure 16.3 in which the estimated factor loadings are recorded that indicate contributions to the latent variable of proficiency performance. These contributions are indicated by the loadings recorded in Table 13.13 in Chapter 13.


Figure 16.3 Changes Over Time Indicated by the Standardized Loadings for Listening, Reading, and Writing and their Contributions to the Reflections of the Latent Variables at Time 1, Time 2 and Time 3 Recorded in Table 13.13.

Figure 16.3 shows that Listening skill in its contribution to English Foreign Language Proficiency continues to increase from Time 1, to Time 2, and to Time 3.

However, Writing skill increases between Time 1 and Time 2 in its contribution, but drops from Time 2 to Time 3: Reading drops from Time 1 to Time 2, but increases in its contribution from Time 2 to Time 3.

The University provides two courses, namely, Course 1 (English 1), and Course 2 (English 2). Course 1 is conducted between Time 1 and Time 2. Course 1 appears to have more impact on Listening and Writing skills. Course 2 is conducted between Time 2 and Time 3. The results of the analyses show that Course 2 has more impact on Listening and Reading skills. These results indicate the changes over time in the relevant contributions of Reading, Listening, and Writing skills and are argued to be related to the teaching that is provided by the University. Thus the interrelated skills that contribute to the student's English language competence record changes over time that are considered to be a consequence of the teaching in English 1 and English 2 courses. These changes and contributions are discussed separately for each skill in the sections that follow, together with the changes in the assessed magnitudes of the scores and the associated effect sizes considered in the previous sections with respect to Research Question 5.

## Q8. Treatment Effects

## What are the Effects of the Course (Treatment) on Specific Changes Over Time in English Foreign Language Performance?

In the contributions of Listening, Writing, and Reading skills to English Foreign Language Proficiency can be explained in a number of ways. It is clear that the courses provided by the University have effects and as a result there are specific changes over time. There are two courses available at the University, namely English 1 (Course 1), and English 2 (Course 2). English 1 is conducted between Time 1 and Time 2, while English 2 is undertaken between Time 2 and Time 3. However, from the results of the computer analyses and the interview discussions, it is found that although the courses provided by the University have effects on students' English Foreign Language Proficiency, there are several other factors previously discussed in this chapter that also have a potential influence on students' English Foreign Language Proficiency. This indicates that relying on formal classroom instruction only for improving the English Foreign Language Proficiency is not adequate since
there are a number of other factors that can also contribute to success in learning English Foreign Language Proficiency.

## Sources of Information on the Effects of the Courses on Changes Over Time

There are four sources that are used to examine the effects of the courses on changes over time. The four sources are: (a) the mean scores of Listening, Writing, and Reading from Time 1, to Time 2, and to Time 3 (see Figure 16.1 and Figure 16.2); (b) the loadings of the manifest variates in their contributions to their latent variables (Figures 16.3 a and b ); (c) the results of the interviews; and (d) the results of the focus group discussions. The effects of the courses on changes over time are discussed in the sections that follow with reference to Listening, Writing, and Reading.

## The Growth of Listening Over Time

Figure 16.1 shows that the mean score of listening increases from Time 1 to Time 2, and to Time 3. In addition, Figure 16.2 (a) shows that for the English Course 1, there is a larger gain in Listening, a smaller gain in Writing, and a drop in Reading. For the English Course 2, Listening has a slightly lower gain than Reading, but higher than Writing. Figure 16.2 (b) records that Listening has a larger gain for the English Course 2 than the English Course 1.

The results of interviews and focus group discussion indicate that an increase in listening from Time 1 to Time 2, and between Time 2 and Time 3 cannot be clearly identified from the roles of English 1 and English 2 that are taught during these time periods. The increase in the effects of listening from Time 1 to Time 2 seems primarily to be the result of the additional development of listening skills at the Language Laboratory. The availability of this additional learning activity and program appears to help learners improve their listening scores. Furthermore, the results of the individual interviews with lecturers and the focus group discussions with students (see Chapters 9, 10, and 11) indicate that: (a) the availability of courses provided by the University, (b) quality of instruction, (c) listening practices from different contexts, (d) item familiarity, (e) extensive listening, (f) strategy instruction, (g) language of instruction and (h) strategy of investment of time and effort as well
as (i) the use of technology are all factors that have a potential influence on students' change over time in the development of listening skills.

## The Growth of Writing (Structure and Written Expression) Over Time

Figure 16.1 shows that the mean score of Writing goes up from Time 1 to Time 2, and continues to increase between Time 2 and Time 3. Moreover, Figure 16.3 records that Writing has a smaller gain than Listening in the English Course 1, but there is a drop in Reading. There is a small gain in Writing in English Course 2. Furthermore, Writing has the smallest gain compared with Listening and Reading in the English Course 2. Figure 16.3 indicates that Writing makes a greater contribution to the latent variable of proficiency at Time 2 than at Time 1, but a lesser contribution to the latent variable of proficiency at Time 3 than at Time 2.

The increase in the mean score of Writing between Time 1 and Time 2 indicates that the instruction focuses on Writing (structure and written expression). In Course 1 students are likely to get more practice in learning grammar and sentence structure in the classroom. This is particularly the case where English is taught as a foreign language. Teaching English as a foreign language has particular characteristics (see Chapters 9, 10 and 11) such as: (a) the target language is formally taught only in the classroom setting; (b) both teachers and students, who are non-native speakers of English, lack the ability to communicate fluently in the target language; (c) teachers place the emphasis in instruction more on grammar and structure than other skills; (d) many error corrections occur in classroom instruction since the focus is on form rather than on use; and (e) there is little opportunity to use the target language as a communication tool.

The results of the interviews and focus group discussions indicate that the decrease in the contribution of writing (structure and written expression) from Time 2 to Time 3 may be a result of a lack of emphasis in teaching being given to writing. Instruction is focused more on doing practice tests rather than writing. Lecturers may assume that students have already mastered grammar and structure and thus, attention is given to other skills. The results of the interviews with the lecturers and the focus group discussions with students indicate that students lack practice and lack the doing of exercises in structure and written expression that in turn lead to the drop in the contribution of writing. Lecturers report that since there are a variety of skills to
teach, lecturers lack the time to teach structure and written expression. Therefore, lack of focus, lack of practice in writing, as well as lack of time to teach structure and written expression also gives rise to the smaller contribution to proficiency that occurs from Time 2 to Time 3. Students are likely to forget some of the patterns in grammar and structure, and in writing performance students are not well prepared to take the writing test.

## The Growth of Reading Over Time

Figure 16.1 shows that the mean score of Reading drops between Time 1 and Time 2, but increases from Time 2 to Time 3. Moreover, Figure 16.3 records that the contribution or loading of Reading also decreases from Time 1 to Time 2, but increases between Time 2 and Time 3. Reading contributes more initially at Time 1, but Reading makes less contribution to the latent variable of proficiency at Time 2 and Time 3. Figure 16.2 (b) indicates that there is a drop in Reading arising from English Course 1, but there is a larger gain in Reading arising from English Course 2. The results of the interviews and focus group discussion (see Chapters 9, 10, and 11) indicate that the decrease in Reading skill from Time 1 to Time 2 is probably caused by (a) the emphases in instruction; (b) lack of extensive reading in English; (c) lack of investment in terms of time and effort; and (d) instruction is less likely to give rise to higher scores in Reading. Since the focus of instruction is given to Writing in Course 1 (structure and written expression), students lack practice in Reading comprehension exercises, because more time is given to the development of Writing skills and Listening skills.

A very small decrease occurs in mean of Reading scores between Time 1 and Time 2. This is probably because instruction is focused more on Listening and on Writing than Reading. However, the magnitude of mean Reading score increases from Time 2 to Time 3. Students spend more time in practising Reading of test questions in Course 2.

Overall, the courses provided by the University have effects on English Language Proficiency, but the courses are not the only factors that influence growth in attaining proficiency over time. From an examination of the data and consideration of
information obtained from the interviews, the results indicate that there are other factors that also influence changes over time in performance.

## Issue 3: Language Teaching

How is the English Language Better Taught?

## Q9. Nature of Entity

## Is English Foreign Language Proficiency Better Considered and Taught as Separate Skills or as a Single Entity?

The AMOS computer program is employed in a confirmatory way to examine two different modes of construction of the latent variable of English Foreign Language Proficiency. These two different analyses are reported in order to select whether English is better considered and taught as separate skills or as a single entity. In this study it is found that both models yield meaningful results. These indicate that both models can be used to guide the teaching of English Foreign Language Proficiency since these models are supported by research findings. Furthermore, these models are related to the objectives of the instruction required and the needs of the students.

The model of the English Foreign Language Proficiency which is constructed from the operation of separate skills produces stronger estimates than the model which is constructed from the operation of a single entity. However, this finding does not establish that English Foreign Language Proficiency is necessarily better considered and taught as separate skills. One of many reasons is that not all classes can be integrated. Some classes, for example at the higher levels of performance, may have specific purposes that may best be associated with one of the three skills as well as a fourth skill of speaking. In these classes, the objective of instruction is constructed explicitly to improve particular skills. In addition, the teaching of English in specific lessons as separated skills is more likely to provide students more time to focus on one skill, rather than teaching the four skills on each occasion. For students with lower performance in a particular skill of the English language, this mode of teaching is likely to help them improve their overall performance as well as performance on a particular skill. Consequently, under these circumstances English Foreign Language Proficiency may be better considered and taught as four separate entities or skills.

However, the results of the analyses also show that the teaching of the English language can involve the three skills of English (namely being taught as a single entity or as skill integration. This may be in line with the rapid development of Information and Communication Technologies (ICT), since a new approach can be related to the objectives of teaching English as a foreign language through the use of technology. The end point of teaching English as a foreign language does not need to emphasize the forms, but focuses on the use of the integrated skills of English in a real-life situation in order that people are able to live in a global world effectively and interactively. Therefore, the goal of teaching English as a foreign language is no longer just for passing a standardized test. People now need to be able to acquire English as the common or global language since this provides them with greater opportunities to participate actively in a broader society, and not limited to local or national groups. People who are able to use a common global language have greater opportunities to be able to communicate internationally since they are more likely to now have the chance to be involved in international activities. This is particularly the case in developing countries where English is not widely spoken in these countries. In order to engage in new experiences and establish contact with other people from different countries and different cultures, this can only be achieved, if such people also understand a common language, namely, English. The findings can be expressed in the terms that it is now necessary to learn and teach 'integrated and dynamic multi-skills'.

## Issue 4: Shaping Policy

How can Policy be Shaped to Improve the Learning of English Foreign Language Proficiency at the University?

Q10. Implications of the Study
What are the Theoretical and Policy Implications of this Study? Implications of the Study

The findings of this investigation contribute not only to build theoretical knowledge but also to providing evidence for policy formulation in order to improve the learning of English Foreign Language Proficiency at the University in Indonesia and other Indonesian universities as well as universities in other Asian countries. The implications for future research must also be considered.

In addition, this study is expected to contribute to the identification of factors that have the potential to influence the attainment of English Foreign Language Proficiency. From the identification of these factors, the policy makers, the decision makers, and teachers of English in Indonesia need to be able to formulate better strategies in order that the learners of English can use these strategies in order to become proficient users of English. In the future, proficient English users are more likely to have greater opportunities to participate in international global activities. The ability to participate in the larger world society helps Indonesia to compete not only with other developing countries but also with more developed countries in the highly competitive world-wide aspects of life such as commerce, tourism, health, and politics as well as technology. It is also expected that this study adds to the scholarly research work on English as a foreign language where the published studies mostly discuss the learning of English as a first or second language. Moreover, it is expected that there is a need for greater communication and understanding between nativespeakers of English and non-native speakers of English on the differences between learning the English language as a second language in a particular country, and the learning of English as a foreign language in a country where English is not widely spoken in that country.

## Theoretical Implications

The Development of a Conceptual Framework and Comprehensive Model for Learning English as a Foreign Language

This investigation provides empirically based evidence from testing and extending existing frameworks and models. The results of one-level PLSPATH analysis indicate that prior achievement is a primary variable that influences English Foreign Language Proficiency, English achievement and students' learning outcomes. Future confirmatory and hierarchical models of the factors that influence English Foreign Language Proficiency, English achievement, and students' learning outcomes need to take the findings derived from this investigation into consideration.

Moreover, after student-level factors that have a direct as well as an indirect influence on English Foreign Language Proficiency and students' Grade Point Average are identified, factors at other levels, such as teacher, faculty, and institutional levels, need to be taken into consideration in order to examine the levels, the nature and the magnitudes of such effects that operate and how they operate. It is
expected that more complex models that involve moderating and mediating effects can provide a more complete picture of the processes involved, including the interrelationships among factors as well as the relationships between the factors and their interactions. Only with evidence of this kind can a more comprehensive model and a more complete conceptual framework for the attainment of proficiency in the learning of a foreign language be developed.

## Teaching and Learning Four Skills or One Entity and Overall Competence Entity

With the rapid changes in the advancement of technology, proficiency in one skill only, such as the reading of English, is no longer adequate. People need to be proficient in all four aspects of listening, reading, writing, and speaking in English in order that they are able to live and work in a global world. Therefore, competence in all four skills of English is required. Integrated skills cannot be implemented formally in the classroom. However, teaching and learning can be done by introducing skills that are taught in an integrated lesson to be used with multimedia technology. In this way, students are expected to have greater opportunities to engage in learning exercises involving a variety of skills and in a greater variety of situations.

## The Demands of Globalization

Globalization requires that other countries of the world live together in peace, and the borders between nations become muted. This also requires that communication, knowledge, and culture need to be shared around the world. Although globalization is primarily viewed as involving changes in commerce and world politics, its effects are varied and spread to all aspects of human life including the many fields of education. The demands of globalization also have a marked influence on the teaching and learning of the English language. Globalization is revolutionizing human communication and this implies that a common world language is urgently needed in order that communication across nations, people, and cultures can be undertaken. It is clear that English is becoming the common language of technology, international business networks, politics, and diplomacy. Recognition of the demand for globalization implies that the English language must be taught and learnt in schools as well as universities all over the world as a global foreign language in order that people are able to live peacefully together in a 'global world'.

## Teaching in Other Universities in Indonesia

The English language spreads around the world through universities, and transnational corporations. Multi-national corporations which are primarily from industrialized countries, have joint ventures with national companies for development in the non-English speaking countries such as Indonesia. As a result of these joint ventures, a common language, mainly, English is now used widely for oral and written communication. This is because legal documents must be written and translated into English, and oral communication must be conducted using a common international language, namely, English. International networks between nations have become extremely important. Moreover, English is the language of Information and Communication Technologies (ICT), for access to knowledge, and of the findings of research. Consequently, English must be more widely and formally taught in schools and universities, with greater opportunities to learn English informally, if Indonesia wants to benefit from its growing number of qualified university graduates.

## Teaching in Other Countries in Asia

This study provides evidence on the importance of English, particularly, for Indonesia and other countries in Asia. Acknowledging the role of English as a language to access research findings, knowledge, and modern technology, it is time for other countries in Asia, where English is not widely taught as a subject, to teach English to all students. This is necessary since English is becoming the global language in all countries in the Asia-Pacific region, particularly, Mainland China, Hong Kong, Japan, Korea, Malaysia, Taiwan, and Vietnam. Appropriate educational policies and practices must be developed jointly in a sustainable and peaceful environment.

## The Use of Multi-Media Technology

The characteristics of the English language make it difficult for teachers of English and learners of English as a foreign language to use English as actively and as rapidly as seems necessary. However, technology such as video recording, television, audio CDs, the internet, the world wide web, and computer software can all aid teaching and learning. This study provides some evidence of the relationships between learning English and technology. Integrating technology into the teaching and learning of English in language laboratories helps learners to learn English more readily and more rapidly. Moreover, the availability of new technology is important
because its use in teaching and learning can overcome the absence of native speakers of English through direct interaction with other learners of English. Students and teachers can use different kinds of technology independently and informally in the learning of English at a language laboratory or at home. In a context where the English language is not widely spoken, the wide availability of language laboratories is important (see Chapter 4 pp . 20-21). Thus language laboratories need to be developed and extended to include many of the new technological devices that are now becoming widely available.

## Further Work on Carroll's Model of Foreign Language Learning

Carroll's model has its roots in foreign language learning. However, it is unfortunate that this model is not more widely used as a theoretical framework for investigating foreign language learning. This may be because Carroll's model is highly stochastic in nature and not many people have experience in working with the appropriate analytical procedures. However, this study provides evidence that Carroll's model of foreign language learning is a very useful framework for investigating factors that have an influence on the attainment of English Foreign Language Proficiency.

## Equity and Disadvantaged Students

In the future the University should plan the teaching and further instruction of individual students since each individual is different and many suffer from serious disadvantages. Some of them are able to acquire English at a faster rate, while the others are slower. Therefore, different treatments need to be provided through the use of multimedia technology. In addition, students who have an adequate initial level of English language proficiency need to have further experiences based on the level of their use of English language proficiency through, for example, participating in student-exchanges, international competitions, international exhibitions, and other international activities. Students with a lower level of English language proficiency need to have support as well as formal remedial instruction through additional tutorials in order that such students may achieve a satisfactory level of English Foreign Language Proficiency. Tutorials or interventions are generally conducted outside the formal classroom by involving collaboration between teacher and tutor as well as between students themselves, where one is a fluent speaker of English, in order to develop the skills, or those aspects of the English language that need to be mastered.

## Policy Implications

## Acceptance of English as a Global Language

At a time when changes are occurring globally, it appears that undoubtedly English plays an important role not only as a primary language to share and exchange thoughts, feelings, and ideas between two, or more people. However, it is also important to note that interaction does not only occur among people but interaction can occur through books, television, and other technology as well as through crosscultural exchange. Therefore in recognition of the important role of English as the means of interaction and communication between people from different countries and different cultures, there is no a doubt that English must be accepted as the common language. Thus the development of communicative competence in English between individuals and groups seems to require the making of formal policies within each country

Lecturers of English and providers of courses as well as key administrators need to make policies that are based on informed decisions about the reasons why English is important in their lives and their national context. Moreover, such informed policies do not only end with an awareness of the importance of English as a global language, but they also need to be publicized through direct action in order that people are able to transform their awareness into daily practice.

## Teaching English in Schools in Indonesia

The emergence of English as a language of globalization and internationalization implies that English must be taught in all Indonesian schools from the years when the mother tongue and national language are formally established. English can be introduced across the years of schooling from primary school to high school in order that all students become familiar with English in a country where English is not widely used.

## English Courses for all Students in all Universities in Indonesia

In recognition of the growing role of English in many aspects of Indonesian life, English courses need to be provided for all students in all universities in Indonesia. It is realized that English is not widely spoken in Indonesia; consequently, in order that students have greater opportunities to learn English, English must become a compulsory subject to be learnt in all universities in Indonesia and by all students. Therefore, students must learn English throughout their period of study in formal
university education. If more students are exposed to English, through interpersonal interaction more readily these students are better able to practise their use of the English language. This helps students to master English both more readily and more rapidly.

## Expansion of English Courses to a Third Course (English 3)

The University under survey wisely insists that the English Language Proficiency Test is a requirement for graduation. Greater assistance needs to be provided in order that these students are able to achieve a mastery level of English Language Proficiency. This can be achieved by introducing further opportunities for learning the skills of Listening, Writing and Reading as well as Speaking by providing more time for English instruction at the University. Providing more exposure to the learning of English through an additional Course (Course 3) cannot only enable students to acquire the English language more readily, but can also help students to attain a higher level of performance in English Language Proficiency. Therefore, expansion of the English courses to a third course (English 3) is strongly recommended.

## Provision of Computers for all Students

Today's students are identified as the 'Net Generation'. Today's students have undergone radical changes. They are born and live in an age which is greatly influenced by technology. Teachers and students in both the processes of teaching and learning interact with computers, and the language of the computer is largely English. The students spend much of their time in using a computer, searching the internet and downloading material, reading an international journal article, as well as for entertainment. Today's university students have had more experience with computer applications such as word processors, drawing tools, animation, and spread sheets since primary school. These computer applications use English as the language of the instruction manual and the language code (menu) of the computer. Consequently, in order that students can obtain the greater benefits from learning English through technology, provision of access to computers for all students is now important. This can be achieved by providing greater access to computers in a library, or in the computer laboratories of the schools and universities.

## Careful Recording of Information by the University

Data employed in this study are obtained from the University data files. However, there is much missing data which means that some cases do not have adequate data. These missing data are caused by unsystematic data recording procedures. Data collection is not administrated and saved systematically. Therefore, the University needs to appoint staff whose job's description involves obtaining and recording the University's data on files that are updated regularly in order that the necessary information is fully recorded.

## Teacher Professional Development in English

Providing access to teacher professional development in the form of workshops and training as well as opportunities to study overseas particularly in an English speaking country are necessary. Access to professional development is required to advance the teacher's knowledge that also helps each teacher to become more confident within his or her profession and be more abreast of recent advances in knowledge. It is necessary to be aware that time passes very quickly and requires teachers who are able to accept dynamic changes. It can be argued that there is a growing awareness that all teachers need to be appropriately trained in English. This is very important since professional development programs for teachers help to advance a teacher's performance, improve their English proficiency, enhance their attitudes, behaviour and teaching skills that in turn, improve student learning.

Workshops that can improve specific teaching skills need to be conducted. Communicative skills, particularly in English are essential. Since the primary objective involves helping teachers to speak and write English, the materials should be relevant to the communication needs, and these workshops need to be accompanied by the presence of people who can speak the target language. Information obtained from the results of interviews and focus group discussions show that it is easier to learn English from people who naturally speak and write the language. Consequently, teachers who attend these workshops are required to have a certain level of English Language Proficiency since after attendance at a workshop these people are expected to be able to help train other teachers. Moreover, if teachers are proficient English users, they are also able to help their students to learn English.

## Research Implications

## Discussion on Mastery of English Language Proficiency

Research and further discussion need to consider the level of mastery required with respect to the ELPT score for a student to graduate from the University with a degree. In addition, the desirable levels of mastery for the skills of Listening, Writing Reading and Speaking need to be identified.

## Improved Measurement of Listening, Writing, and Reading Tests

Considerably more research is required to improve the measurement of properties of Speaking, Listening, Writing, and Reading tests. The measurement properties of such tests can be increased by employing Rasch scaling procedures. This is because Rasch analysis is able to detect item difficulty, item discrimination, and item bias with multiple response categories. Item difficulty is the proportion of students who are able to answer at or above specified levels; while a biased item involves differences in the results of a test that are affected by an individual's culture, gender, or race. Item discrimination involves the degree to which the answer to an item is classified unambiguously. Rasch scaling analysis also involves examining item fit statistics and item thresholds and removing those items that reveal poor fit to the Rasch model of measurement. Research concerned with item analysis and measurement is important since the results can be used to develop tests that measure performance on an interval scale of measurement that enables a standard of mastery to be specified as well as providing an accurate estimation of change in performance over time on a linear scale.

## Development of Computer Based Speaking Tests

'Awareness-raising' of the importance of English is no longer adequate. Awareness needs to be extended into practice. The English language is spreading around the globe and is gaining status both as a second and a foreign language. English is spoken by approximately 1.5 billion, but that is less than a quarter of the world's population. Challenges from globalization and modernization cannot be ignored. English has moved from an international language to the position of a global language for widespread communication across the World. These new challenges require that people are able to communicate in English. People are expected to have an adequate level of communicative competence, to be able to communicate accurately and appropriately in all communication aspects, namely, listening,
reading, writing, and necessarily speaking. In order to provide assistance for the learners of English as a foreign language, in particular, it is essential to develop computer based speaking tests. Furthermore, the development of computer based speaking tests provides greater opportunities for foreign language learners to practise their speech independently without relying on the availability of the native speaker of English to assess their performance.

## Research Studies in Other Indonesian Universities

Considerably more research concerning the factors that influence English Foreign Language Proficiency and student learning outcomes at the university level is vitally important in other Indonesian universities and in other Asian countries. It is necessary to inform the education industry about how best students can learn English as a foreign language, to identify the factors that contribute to success in learning English together with the factors that inhibit students in learning English, as well as how such inhibiting factors can be overcome.

Moreover, this is the first policy-oriented research study that has been conducted at the particular University under survey in Indonesia. This study is based on current and important issues in order to recognize the problems and to help the providers of courses in English to shape better policies for learning English in the future. Although different universities in Indonesia have different characteristics which may influence the application of the findings to other universities in Indonesia, some useful ideas may be drawn from the findings for the conduct of similar studies in these universities.

## Research into Scoring, Scaling, and Recording of Information

Research to inform the strategies of scoring, scaling, and recording of information is vitally important. Such research is important because not all variables are readily observed, but these events or constructs exist in the real world. In order that these events or constructs are able to be observed, and analyzed, such information needs to be measured on accurate scales. The scaling procedures involve the collection of information on items that are combined into a composite score that measures the level of an underlying variable. Moreover, the recording of information through a written questionnaire may be the best method of assessing such events and constructs. Analytical research helps investigators understand how certain relationships between events and constructs imply specific relationships between
items and their underlying measures. Such research is not being given adequate attention in many developing countries.

## Research Studies in Other Countries

This is the first study that investigates how students are selected at the University under survey and that has the potential to influence the learning of English Foreign Language Proficiency, and students' learning outcomes as assessed by their Grade Point Average (GPA). There have been few studies conducted in developing countries which examine the relationships between methods of student selection and students' learning outcomes. Developed countries are well-known for attracting international students from developing countries around the world in order to continue their study in more industrially advanced countries. The students are selected by a variety of procedures, and the effects of these procedures require further thorough examination.

## Conclusion

## No Single Factor Influences English Foreign Language Proficiency

The process and conduct of this inquiry has not been simple. It involved a range of different issues and research questions. Each research question required a different approach. This study was multi-method requiring tools from both the qualitative and the quantitative approaches in which the findings could be integrated resulting in rich, strong and more powerful information. The findings of this study lead to a conclusion that 'there is no single factor or group of factors that are able to explain fully English Foreign Language Proficiency'. The factors that influence English Foreign Language Proficiency are highly complex. By implication then, it may be inferred that the processes of teaching and learning English as a foreign language are not as easy as those of teaching and learning English as a first, or even a second language.

## Learning English as a Foreign Language Differs from Learning English as a Second Language

The learning of English as a second language is very different from learning English as a foreign language, and it is often difficult for individuals to comprehend just how different the processes involved are. This is because assumptions are made that
learning English as a foreign language is the same as learning English as a second language. However, this assumption is not borne out by research.

A model of learning English as a foreign language is based on the analyses of a number of different datasets. Hence, it is hoped that with the development of an adequate model, some contributions to the field of teaching and learning English as a foreign language can be made. The findings of this study are expected to have enormous implications for theory, for teaching, for policy, and for future research. Similar research needs to be undertaken in learning English as a Second Language (ESL).

## English as a Second Language

The major difference in the processes of learning English as a second language and learning English as a foreign language involves differences in access to learning experiences in daily life both in work and play. The closing of the gap that arises in foreign language learning can be filled in part by the planned use of multimedia technology. Moreover, the gap that arises in second language learning can also probably be readily obtained through global communication, again through the use of multimedia technology.

## This Study in Overview

Four major issues associated with the teaching and learning of English as a foreign language are addressed. These are:

1) The identification of factors that influence the learning of English as a Foreign Language.
2) The relationships that exist among the nature of courses and growth in language proficiency over time.
3) The relationship among the component skills and success in learning English as a Foreign Language.
4) The formulation of evidence based recommendations for shaping policy around the learning of English as a Foreign Language in a global context.

The research questions are directed towards specific aspects of these issues. Since this study involves a multi-method approach, data are obtained from two sources, namely, (a) University data files; and (b) information from interview and focus group discussions. A model of learning English as a foreign language is developed from these two sources. Carroll's model of foreign language learning is used as the theoretical foundation for this study.

Thus, the results obtained from the interview strategies are embedded within the results obtained from measurement strategies in order to build a comprehensive model of learning English as a foreign language. These results are presented in detail in the earlier pages of this chapter. However, this study is linked to learning at the University level, and a similar study is needed at the school level. Moreover, a similar study is also needed about learning English as a second language at the school and university levels.

## A Comprehensive Model

A comprehensive model for learning English as a Foreign Language is systemic in nature and involves five levels of operation. It is presented in Figure 16.4. From this study the processes in operation can now be provided in some detail, but perhaps only tentatively. However, a similar and conjoint model is needed for the learning of English as a second language in other Asian countries such as Singapore, Hong Kong, or India.

## Towards a Comprehensive Multilevel Model of Learning English as a Foreign Language in Indonesia and Asian Countries

Figure 16.4 shows that a model is tested with the understanding that this model is multilevel in nature. It is because this model is built involving two different levels of analysis, namely the micro level measuring change over time and the macro level measuring student characteristics. Moreover, since this investigation employs a multi-method study, namely a variety of quantitative approaches as well as qualitative approaches, this dataset collected from these two different approaches provide more opportunities to advance the model into a six-level comprehensive model of learning English as a foreign language, namely (a) intrastudent level; (b) interstudent level (c) teacher level; (d) school/university level; (e) national level; as well as the inter-global movement level.
The model is identified as a comprehensive model because this is built in several stages involving different analyses employing different dataset collected. The model is not built at one time. This involves a number of trials and errors as well as careful thought in order to build a better comprehensive model emerging from different results of analyses from the different dataset available. A variety of research questions investigated requires that several different computer packages are
employed in the analyses. A number of different methods of analysis are employed in order to address the research questions advanced. The model is presented as follow.


Figure 16.4 A Comprehensive Multilevel Model of Learning English as a Foreign Language

## Towards a Better Future for the University

A policy statement that takes into consideration the five levels of operation identified in the comprehensive model of learning English as a Foreign Language is required. However, any implementation of such a policy must as a first priority be developed in consultation with colleagues and staff at the university. The six levels involve the global movement level; (e) foreign language at national level; (d) school and university levels; (c) teacher level; (b) the interstudent level and (a) intrastudent level.

At the global level a shift in emphasis from learning English as a Foreign Language to learning English as a global language is necessary since this will influence Indonesia's capacity to engage in future development in a global context. This idea is presented in Figure 16.5.


Figure 16.5 A Shift in the Way English is Perceived

At the national level greater access to computational and technological resources is required in order for the resulting gap between learning English as a Foreign Language and learning English as a global language to be filled.

At the school and university levels the provision for greater amounts of time allocated to the learning and teaching of English is required. This includes access to a range of experiences and length of time practising English.

At the teacher level opportunities for professional learning are needed. This includes enhancing teacher qualifications, teaching methods, curriculum development, teacher competence, teacher readiness, strategy of instruction, strategy training, and planning and ordering learning.

At the interstudent level enhanced opportunities for students to participate in learning English as a global language are needed. This is particularly the case for students from lower socio-economic backgrounds and for students who are female. Further opportunities for students who obtained lower scores in English proficiency in the national test need to be provided with learning opportunities to improve their English proficiency. In addition students from Faculties whose clients have not had access to computer resources need to be provided with additional technological resources and associated professional help. Furthermore, students need to be provided with a supportive learning environment that encourages the investment of time, efforts and energy to the learning of English. They need to be helped to see the importance of learning English for themselves in a world where English is increasingly becoming the language of access across the globe. There are great benefits to be had by students personally identifying with the need to learn English resulting in increased motivation to learn. Allied with this requirement is the need to provide quality teaching materials and resources that capture the students' interest, giving purpose and meaning to their learning.

At the intrastudent level advances in measurement of four scales for Listening, Reading, Writing, and Speaking.

## APPENDICES

## Appendix 1.1A: Organization of the Report of the Investigation and Inquiry

The Report of the Investigation and Inquiry begins with Chapter 1 in which the current global changes in educational processes, in general, and the teaching of the English language, in particular, are advanced to form the setting of this policyoriented research investigation, together with specific reference to the university involved that is chosen as the situation for the study. Based on this information, the specific aims of the study are advanced from which the significance and limitations of the investigation are stated.

Chapter 2 presents and discusses a statement on the place and the importance of the English language in the globalization movement that is occurring in the twenty-first century. In addition, this chapter presents information about the reasons why it is necessary for people in Asian countries to learn the English language. Some reasons such as economic development and the rapid growth of trade, further education, international publication in English, the need for cross-national communication, and the advancement in Information and Communication Technology (ICT), as well as the growing status of English as a global language are discussed in this chapter.

Chapter 3 introduces information about the educational reform taking place in Indonesia, and the relationships between educational reform, globalization, and the learning of English with particular reference to Indonesia. In addition, perceptions about the English language that is emerging as the global language are presented and addressed.

Chapter 4 focuses on a review of a wide range of factors that have the potential to influence English language learning both in Indonesia and in other crossnational situations. Thus, information about the factors that influence English language learning derived from previous research studies are of considerable importance.

Chapter 5 presents information derived from a review of what is published on the learning of English as a foreign language in addition to the learning of English as a second language over an extended period of time as well as across the world. The
introductory section is followed by an examination of the theoretical framework that underpins this study, that focuses on language acquisition theory and on how languages are learnt. In particular, Carroll's model of foreign language learning provides a sound conceptual framework for this investigation.

Chapter 6 introduces the two methods of investigation employed in this study, namely two types of data collection, the collection of information from interviews that provide primary data, and the collection of the secondary data from the university data files. An overview of the use of secondary data is presented in the Appendix to Chapter 6. Furthermore, this chapter considers issues related to ethical considerations and to the methods of data analysis employed in this investigation.

Chapter 7 deals with the design and operation of this study. The introductory section focuses on the population under survey, the instruments used in the study, the data sets and information available from the university, and the preparation of the data and information for analysis. The models and relationships that are examined in this study for factors and processes which influence English language learning at the student level, together with two phases of how this investigation operates are discussed.

Chapter 8 discusses the characteristics of the students involved in the study. This chapter also discusses the use of rank-scaled, criterion-scaled and IRT-scaled scoring in the formation of variables from categorical data.

Chapter 9 presents the results of individual interviews with the lecturers of English and their views concerning the teaching and learning of English at a University where the primary focus is on engineering and technology and not on a major course of study involving the learning of a foreign language, namely, English.

Chapter 10 considers the results of focus group discussions (FGD) with samples of students and these students' views, attitudes and values on the learning of English as a foreign language.

Chapter 11 considers the results of the interviews with the lecturers of English and the focus group discussions (FGD) with students with respect to the structure of the English courses conducted at the university.

Chapter 12 presents the results of the analyses into the student level factors that have an influence on English Language Proficiency and the learning outcomes of the engineering and technology courses (GPA). Data are analyzed using the PLSPATH computer program, that is introduced and discussed in this chapter.

Chapter 13 examines the results of PLSPATH analyses of the causal path models operating in the unity mode, the inward mode as well as in the outward mode. The chapter begins by discussing the differences between the three modes of operation as well as the issues addressed in the investigation of change in performance on English Foreign Language Proficiency Test over time.

Chapter 14 presents the results of examining the three skills of Listening, Reading, and Writing as separate entities using the AMOS computer program.

Chapter 15 presents the results of assessing English Language Proficiency as a single entity developed from the constituent skills of Listening, Reading, and Writing. The AMOS computer program is used to examine change over time in the learning of English and the influences of the two courses provided by the University for students during the two years of study.

Chapter 16 is the closing chapter in which a summary of the findings of the investigation and the results of the qualitative and quantitative strategies of inquiry are discussed. This is followed by the conclusions and the policy implications of the study, as well as the making of recommendations for the introduction of change and the development of courses in addition to suggestions for further studies and the systematic monitoring of student performance on the use of English as a global language. In addition a comprehensive model for the learning of English as a foreign language in Indonesian and Asian countries as well as a global language is presented and discussed.

## Appendix 1.2A: Forms of Payment

Forms of Payment refer to the monetary costs incurred because of varying entry fees. There are different amounts of money paid to the university resulting from the different student selection criteria.

Forms of payment are the last stage in the process of entry at the University. As illustrated in the Figure 1A, there are three types of payment: (a) free or no payment, (b) tuition fees, and (c) tuition fees and a donation. Students who are accepted at the university by scholarship are free of payment. This type of entry is given to students who are from low socio-economic status homes. However, the quota for this type of payment is very small.

Students have to pay only a tuition fee if they are accepted at the university by the national test (SNMPTN) or if the students are accepted at the university because they have a high enough level of achievement in education, science and technology, sport or art to be chosen for entry. Students who are accepted at the university because of demonstrated excellence in Mathematics and Science and owing to their business and industry connections are required to pay tuition fees and an institutional donation. Forms of payment operating at the university are shown in Figure 1A.


Figure 1A Forms of Payment Operating at the University

## Appendix 1.3A: Opportunity to Learn English: Sixteen Meetings Two hours Each Week

Opportunity to learn English is provided in courses involving two hours a week or 16 meetings. All students on entry should have English Language Proficiency score of at least 450, 500 or 600, and must do two hours of English learning in classes each week on top of their academic work. Two questions must be asked: (a) Do they improve?, and (b) Who makes progress?

These questions are very important since there is argued to be a relationship between opportunity to learn and student learning outcomes. The limited time available to teach English, leads teachers to teach to the test. It is unwise to force students to attain a high level of English proficiency with restricted time available for learning. It is also unwise to make the assumption that students would already have sufficient prior knowledge concerning English use, because they had learnt English at the secondary school level, or even from the primary school level. Teachers or policy makers are sometimes, or even frequently, not aware that there are few opportunities for students to use English in a real life situation involving communication, since the status of English in Indonesia is identified as a foreign language. This means that English is only learned in formal classroom settings with little opportunities for use outside the classroom. There are many individuals, who only with a lot of effort show improvement in their learning of English. However, students are aware that they have to pass the test with a high level of English language proficiency. Therefore they take some initiatives by enrolling in an additional English course if they have money to pay, or by practising among themselves in a Self-access Centre provided by the Language Centre at the University, if they have insufficient money to pay. Some students depend only on the formal class course. Only individuals who have a high level of perseverance to learn English are able to obtain a satisfactorily high level of English proficiency. Consequently, in order to improve student proficiency in the use of English, it is of considerable importance to address the issue of the progress that students make in a course of a limited duration of two hours a week for a semester.

## Appendix 2.1A: English in India

India, like such other countries, such as Malaysia, Singapore, and Hong Kong, was formerly colonized by the British, therefore it is not surprising that in this country English language has a greater role than in such countries as Japan, Indonesia, and Korea. When India was occupied by the British, English was used extensively in some aspects of life such as in education and government. After the British left India, English was still used. The learning of the English language has been readily available since then. The older Indian generations transferred their ability to communicate in English to their new generations.

English has an important part in the educational system, and is taught at every stage of education in all states of India. English is the medium of instruction both in the schools and in most universities. English textbooks are used in higher levels of education. However, Vaish (2005, p. 2flinders usb) stated that "India is a nation without a national language". Since there were about 18 major regional languages in India, the Constitution in 1950 did not give national language status to any of the 18 languages. Two languages, namely Hindi and English, gained status as co-official languages.

English in India has high status since it is used for national purposes. English is the link language (Berns, 1999) among the 1600 dialects and the 18 regional languages in India. English is officially used as a language in courts and the administrative work of India. Although India had 18 regional languages, the Indian Bar Council made the commitment that employing one language, namely, English was to be used in all higher courts and lower courts. It was based on the Council's claim that "English ensures 'national integration' and 'all-India standards' within the legal system (Berns, 1999, p. 8).

Berns (1999) also reported that English and Hindi were the two languages used in administration and in broadcasting in all-India Radio. Indians used these two languages for interaction in their society. The production of books in English has increased annually. Most research findings are now reported and published in English scientific journals. Many inventions and improvements in engineering and technology are also published in English journals. Increasingly, literature written in English is developing significantly in India and is regarded as national literature. Thus bilingualism in English and Hindi in India has expanded the size of the potential audience for this literature.

## Appendix 2.2A: Impact of English as the Global Language in the Asia-Pacific Regions

English as the global language has an impact on the Asia-Pacific Regions such as China, Hong Kong, Japan, Korea, Malaysia, Taiwan, and Vietnam.

## China

In China, for example, Nunan (2003) found that age for compulsory English was lowered from 11 to 9 years in secondary school. English was used as a language tested for university entry as well as enhanced future promotion in the workplace.

Moreover, in 2001 the China's Ministry of Education mandated that English was used as a medium of academic instruction for some courses such as information technology, biotechnology, new-material technology, finance, foreign trade, economics, and law in all colleges and universities. The reasons for selecting courses were that these courses facilitate entry to the World Trade Organization (WTO) and were seen as not 'politically sensitive', therefore, the course could be taught using foreign textbooks. Courses which were seen as politically sensitive were taught using a textbook written in China.

The dominance of English as an international communication had significant implications for foreign languages teaching and learning in China. Yang (2001, p. 353) pointed out that

It has reshaped the market value structure of various foreign languages in China. From a sociolinguistic viewpoint, the market value of foreign languages reflects their social economic benefits, albeit not always comprehensively. The perceived value is determined both by the demand-supply relationship caused by social economic development and international communication and by the domestic need within a country.

## Hong Kong

Hong Kong's Government seriously enhanced their peoples' skills of English, otherwise Hong Kong lost economic advantage. English was introduced in Hong Kong when students were at Year 1 or when students were six-years old. In Hong Kong, English symbolized wealth and power since 1997 after its independence from Great Britain. English had been used as the prevalent language in the government, legislature, and judiciary. As the centre of international trading, business, banking, and communication, English was seen as a significant key in maintaining its position in these areas (Forey and Nunan, 2002). Even in order to provide a good model in English, Hong Kong had operated the Native English Teacher (NET) scheme by recruiting qualified native-speakers of English to teach English in Hong Kong.

Since English had an influence on the economic development, scientific knowledge, the advancement of technology, commercial and cultural, the importance of English had been explicit in a government policy document (Curriculum Development Council, 1999) which stated that:

As a result of the number, size and influence of the English-speaking countries in the world and their scientific, technological, economic, commercial and cultural influences, English has become a truly
international language. English is the language of international communication, commerce, education and entertainment. The mastery of English therefore opens up new possibilities for our students in career advancement, educational attainment and personal fulfillment. (p. 1)

Another government document (Curriculum Development Council, 2000) showed the influence of English as a global language and stated that the English Language Education sought to provide a curriculum framework that contributed to enhancing the language proficiency of young people for the following reasons:

> To enhance the competitiveness of Hong Kong so that it will be able to maintain its position as an international business center and a knowledge based economy, capable of rising to the challenges of global competition;
> To help our young people to develop a worldwide outlook through broadening their knowledge and experience;
> To enable our young people to use English proficiently for study, work, leisure and effective interaction in different cultural environments; and
> .To help our young people succeed in life and greater personal fulfillment.
> (p. 2)

## Japan

In Japan, English was introduced at the first year of Junior High School at age 12 as a compulsory subject. Students were particularly exposed to speaking and listening. Although English was introduced when students were 12 years old, in 2002 a course, namely, General Studies, was introduced in all public primary schools in Japan. The course covered foreign languages, including English, welfare, global education, and the environment. The course was introduced for students from Grade 3 to Grade 5. Because the Government did not propose to teach English formally at the primary school level, the teaching of English was only for 'fun' and therefore there was no textbook provided.
Similar to Hong Kong, Japan operated the Japan Exchange and Teaching (JET) Programme for about 15 years. There were about 5,000 native-speakers of English who provided and supported instruction in the schools and the Government spent large sums of money paying native-speakers of teachers who were English teachers. Similar to Hong Kong, the scheme was controversial and was criticized by Japanese and JET teachers alike. Regardless of the criticism, some aspects of the scheme met with qualified success (Sturman, 1992)

## Korea

In Korea, English was a compulsory subject and teaching was lowered from age 13 to 9 years. English was a major concern in all areas of government and education. All Universities and Colleges provided 3 to 12 credit hours English. Many universities and employers required that students and job seekers had attained a minimum score level on a Test of English for International Communication or a Test of English as a Foreign Language before entering universities and the workforce.

A large amount of money was invested in learning and teaching English in Korea. The Government adopted a communicative, grammatical-translation syllabus in 1995. In 2002, the Ministry of Education mandated the use of English as the medium of Instruction in English classes. However, this became a big problem for teachers of English in Korea since they were non-native speakers of English. Many teacher lacked proficiency in English and lacked confidence. Park (2000) argued that this could only be addressed through teacher education.

## Malaysia

Malaysia was a colony of Great Britain and gained independence in 1957. The teaching of English was not taught in schools in the 1960s and 1970s. However, in 1990s the Government was aware that if Malaysians did not learn to use English, Malaysia would lose economic advantages. This would be the case when Malaysia would declare that it was a developed nation in 2020.

The Government has invested large sums of money on teaching English. The Government of Malaysia introduced English at age 7 years. Malaysia was especially concerned with a decline in educational standards and loss of competitive economic advantage.
Nevertheless, in the national schools, the Malay language (Bahasa Malaysia) was the language most used. The Government reintroduced English as a medium of academic instruction for teaching Mathematics and Science in 2003, but in 2010 there was a reversion back to teaching Mathematics and Science in Bahasa Malaysia.

## Taiwan

The Government of Taiwan identified English as a compulsory subject from ages 11 to 12 years in Junior High Schools. English then played an important role in education and employment. Job seekers were required to have a high level of English
language proficiency when entering the workforce. Subsequently, the emergence of English as a global language inspired the Government to lead Taiwan to become an economic global player. Consequently, in September 2001 English teaching was introduced in Grade 5, and was lowered to Grade 1 in 2002. However, the major problem for teachers of English in Taiwan was the limited training of teachers and the lack teacher training programs. Even teachers who had already taken the training program still found difficulty with their English skills as well as with teaching pedagogy. They had no experience in teaching young learners. Since the Government had already invested a large amount of money on the learning and teaching English, these efforts would provide beneficial results at a later stage.

## Vietnam

English was introduced in Vietnam when students were 11 or 12 years old. English was identified as a compulsory subject both in Junior High Schools and Senior High Schools. Although the prevailing method of teaching of English in Vietnam was said to be 'communicative', it was difficult to see this in reality. Communicative Language Teaching (CLT) was only stated on paper, and not in practice, since the learning of English focused more on doing grammar exercises and reading comprehension. Nunan (2003) conducted an individual interview and an informant reported that

> All the books present a lot of exercises on grammar exercises and reading comprehension. I used to teach high school and left after eighteen years. From my experience, student cannot use the language in communicating. There used to be no tapes for listening, and there are no listening exercises. They have made the tape for listening now, but the books are just the same.

The emergence of English as a global language has had considerable impact on policy and practice in Vietnam. Again, one of Nunan's (2003) informants commented that

It can be said that the English has become a must for success in both studying and working. One of the requirements in jobs advertisements is proficiency in English (another is computer skills). Since 1986, the year the government began to apply its open door policy, language centres have mushroomed all over Ho Chi Minh City and other big cities and towns. English is also compulsory at the university level and it helps both students and workers to gain scholarships to go abroad.

## Appendix 3.1A: The Law of Educational Legal Entity (UU BPP)

## The Law of Educational Legal Entity (UU BHP)

Indonesia will lose its human capital assets if attention is not given to qualified people since these people gain more attention from another country to work and develop their scientific knowledge for another country, and of course with high appreciation.

A lot of efforts have been done by BHMN universities to manage their own universities and to enhance the quality of knowledge production. However, reality shows that these efforts result in the high cost of education. It must be borne in mind that this high cost is caused by the inability of the government to meet educational costs.

It is expected that the cancellation of UU BHP does not inhibit BHMN universities to be world class universities. The process of modernisation cannot be stopped by only the cancellation of the law. It is because modernisation does not only occur in institution, but modernisation occurs through culture, behaviour, as well as awareness of all educational stakeholders.

## Law No 12/2012 about Higher Education

This major law has been introduced. However, the emergence of Law No 12/2012 (UU PT) is not without controversy. Similar to the emergence of the Law No 9/2009 about the Educational Legal Institution (UU BHP), Law No 12/2012 (UU PT) is also rejected by many parties such as educational practitioners, educational observers, students, and Private Universities as well as the Society Empowerment Institution. The rejection of the Law No 12/2012 is a series of form of disagreement since the Law is still in the form of draft in 4 April 2012. However, since then draft of the Law 12/2012 had been legalised.

The Ministry of National Education, Nuh, (Kompas, 2012) stated that the draft of Law 12/2012 (RUU PT) contained a number of new initiatives that would be introduced in the 2012-2013 academic year. Nuh also added that since RUU PT had been legalised, there were opportunities for State Universities to propose cost operational funding (BO PTN) to the Ministry of National Education. After RUU PT had been introduced, cost operational funding (BO PTN) would be budgeted by the State Spending and Income Budget (APBN).

Some reasons for disagreement with the legalization of UU PT were that there was similarity between UU BHP and UU PT. UU PT was just a result of the 'cloning' of UU BHP, the indication of Higher Education Liberalisation, and the indication of intervention from the Ministry of Education and the Government in managing authority in higher education autonomy (Kompas, 2012). These reasons are discussed in more detail in the section that follows.

UU PT was assumed as a result of cloning of UU BHP. This was because UU PT contained many articles about the Educational Legal Institution (BHP). In fact, the Educational Legal Institution (BHP) had already been cancelled by the Constitution Court in 31 March 2010 because there were large numbers of articles that contradicted the 1945 Constitution of Indonesia (UUD 1945). UU PT was assumed to enliven UU BHP that tended to commercialise education. However, an expert in education argued that this argument was not true. It was because UU PT was not based on UU No. 2/2003 about National Education System (Sisdiknas) like its predecessor, namely, UU BHP, but UU PT was directly based on the 1945 Constitution of Indonesia (UUD 1945). Moreover, although UU BHP had already been cancelled by the Constitution Court, according to the Constitution Court decision No. 11-14-21-126-136/PUU-VII/2009 (Kompas, 2012), the phrase 'the Education Legal Entity Bill (BHP)' should be meant as 'the education holder', and should not be meant as the form of certain corporate body. In addition, the idea of 'educational liberalization' in UU PT should be more concretely proven. Basically, the role of BHP in UU PT was more financial management that employed the General Service Body System (BLU) using the principles of 'non-profit', efficiency, and productivity. Unfortunately, not many people understood how BLU operated. This misunderstanding was used as a trigger to reject the emergence of UU PT. BLU had successfully operated since 2005, and there were relatively no problems with BLU since its introduction. If there was an issue raised by BLU, it was not because the system was wrong, but because there was a certain person who did not direct BLU in an appropriate way.

Secondly, there was the idea of 'educational liberalization'. This policy referred to the UU PT Article 90 about the possibility of foreign universities establishing their branches in Indonesia. This article enabled foreign universities to invest 'social', 'businesses, and 'ideology'. Acoording to Prof. Dr. Sofyan Efendi (Kompas, 2012), there was a long history behind this article. Since 1994, Indonesia had ratified
multilateral trade agreements and had become a member of the World Trade Organization (WTO).

Moreover, since 2005, Indonesia had signed the General Agreement on Trade in Services (GATS) where one of the 12 services involved education. WTO had identified four modes of educational services.

1. 'Cross-border supply' meant that overseas universities offered lectures through the internet and an on-line degree program.
2. 'Consumption abroad' meant that a large number of students continued their study in overseas universities.
3. 'Commercial presence' meant that foreign universities formed partnerships, subsidiary, and twinning arrangements with local universities.
4. 'Presence of natural persons' meant that lecturers or educator from overseas universities were able to teach in local education institution'.

WTO promoted educational liberalization in order that the government of its member countries did not inhibit these four modes through interventions. Compared to South East Asian countries such as Malaysia, Thailand, the Philippines, and Singapore, Indonesia was far behind in the extent of participation on higher education and academic quality. The level of Indonesian participation on higher education had just reached 14 per cent, while Malaysia and the Philippines had reached $38-40$ per cent. There were three factors that influenced the growth of a borderless market in higher education. They were government funding restrictions, the increase in the demand for higher quality education, and the advancement of information and technology.

Undoubtedly, UU PT Article 90 involved the implementation of educational liberalization. This could not be avoided if Indonesia remained a member of WTO. Although this was part of internationalisation, the Indonesian Government needed to make appropriate regulations in order that the objective of national education could be achieved.

In terms of ideology, Pancasila (the state ideology) was not an isolated ideology that was unable to prevent a foreign ideology. Indonesia needed to be able to introduce Pancasila to other countries. In this way Pancasila needed to be a universal ideology that was in line with Marxism, Liberalism, Socialism, and other ideologies. More importantly, UU PT had identified Pancasila as a compulsory subject to be taught in all universities in Indonesia. Consequently, another university, such as Harvard University, that was planning to open a branch in Indonesia needed to teach Pancasila as a subject of study.

Thus, in relation to autonomy in higher education, some educational observers stated that UU PT contradicted to the concept of 'autonomy in higher education'. The Government was assumed to be able to intervene with respect to knowledge, curriculum, and the conduct of research. It was argued by some that government intervention would slow down the advancement of scientific knowledge. However, in practice, government intervention needed to be considered positively, since government intervention in higher education was not without strong reasons.

## Appendix 3.2A: The Development of English as a Foreign Language versus Bahasa Indonesia as a National Language in Indonesia

Indonesian language planning and the language policy employed throughout the archipelago emphasizes Bahasa Indonesia for unification and modernisation, and with English as the foreign language (rejecting the colonialist language, Dutch). Language planning is defined as

Activity mostly visibly undertaken by government $\qquad$ intended to promote systematic linguistic change; to modify language behaviour in a community of speakers. (Kaplan \& Baldauf, 1997, p. xi)

While language policy can be defined as
A set of ideas, laws and practices intended to achieve the desired change. (Kaplan \& Baldauf, 1997, p. xi)

Bahasa Indonesia was appointed as the national language, as a symbol of regional identity, independence, and integration. Bahasa Indonesia was developed as a lingua franca, as a link language in a highly diverse nation.
In Indonesia, English was not often used as the medium communication in the wider society. This was because Bahasa Indonesia was the most common language that dominated public functions (Lauder, 2008). While Bahasa Indonesia was successful in obtaining status, as indicated by the large number of people who used Indonesian in daily communication, English has been promoted less as the language of International communication. This has been demonstrated by those people who have an important position in the Government and they have shown great difficulty in coping with English. Many errors have been observed when they made a presentation. Moreover, most of them have relied heavily upon an English interpreter when they welcomed guests from an English speaking country. Even, highly
educated people were not able to read articles written in English. Therefore, they only spoke and wrote their papers in Bahasa Indonesia.

The choice of the Indonesian language to become the national language was accepted. Although English was not used as an official language in government, business, or the education system, English was still seen as the major foreign language to be taught in school and university (Simatupang, 1999, 64). However, this was not the only foreign language that was taught.

The position of English, which was merely a foreign language in this context, would seem to be a burden for English language learners. It was not only because foreign language learning had certain characteristics that made it different from both first or second language learning, but also because English was placed in the third position of the three languages in Indonesia after Bahasa Indonesia and the regional vernaculars (Lauder, 2008).

The major problem of foreign language learning was that learning the language was merely taught in classroom settings with limited opportunities to use the language as a medium of daily social interaction. The teaching and learning only occurred in the learners' native country. Consequently opportunities to interact with native speakers of English were few and far between. Simply exposing the learners to formal classroom instruction was insufficient, associated interaction was also required in order to become proficient as a learner of English.

Moreover, the emphasis on teaching grammar and structure in the classroom restricted the students' opportunities to learn to speak English. Therefore, it was not surprising that Indonesian students were often excellent in the grammar and structure of English, but they were not able to use it in general communication. This was merely because the teaching strategies employed in the grammar-translation method were not relevant in the situation where everybody was required to be able to communicate in English.

Since English is learnt in classroom settings, it is frequently considered that English is merely a subject of study and only formally learnt. However, this view is not relevant when it is linked to the view that English is becoming the global language. It is consequently necessary to form a broader opinion about the importance of learning English that is much more than just being a subject of study. It must be realized that English is being used globally, particularly in the fields of engineering, science and technology. The emergence of sophisticated digital technology demands that people
are literate in the use of technology, while at the same time those people have to master English, since the instructions in the use of technology are largely written in English. Moreover, most research reports and publications are published in English. In order to advance the use of science, technology and engineering, proficiency in English is essential. Consequently, in order for learners of English learn English through new technologies, it is important to incorporate technology into the curriculum of learning the English language.

## English Language in Indonesia: Demand and Fear

Although the Indonesian people and policy makers have positive views and support the development of the use of the English language in Indonesia, in a variety of ways, it is not without a feeling of fear. Everybody understands that the more people succeed in the use of English, the more people succeed in the global economy. This emphasizes that through having a high level of English language proficiency more is demanded of them in order that Indonesia is able to compete in the global market. Thus, the demand for Indonesians to be proficient in the English language also raises feelings of fear. There have been long debates among scholars and policy makers about the effects of colonialism through the effects of English speakers on other languages in countries where English was used (Jenkin, 2003, p. 50). However, for Indonesians the prime feeling of fear is not because English is the language of the colonialists, as some scholars employed to criticize the use of English, since the language of the colonialists in Indonesia was Dutch. Consequently, this reason is not relevant in a country such as Indonesia.
The dominant position that English is now viewed as a source of undesirable influence on Indonesian life, culture and language, while at the same time Indonesian people are expected to be able to gain the benefit for national development from being able to communicate in English. The role that English can play in Indonesia is seen mainly as a tool to bring information, for the advancement of engineering, science and technology that can benefit national development. Therefore, for some people, the role of English is restricted to accessing information that can benefit and promote economic growth.

Some Indonesian educators have been worried about this development in the use of the English language in Indonesia, since they have argued that it was as a 'threat' to Indonesian culture, and values (Lauder, 2008). English was the language of Western
people, and their values and culture would replace Eastern values and culture. However, this was only a kind of "language schizophrenia" or "language exolinguaphobia" (Kartono, 1976, p. 124) and it was difficult to see that English and American culture could replace the local values and culture. However, it would be also a mistake to view English as a threat to Bahasa Indonesia (Indonesian language) development (Dardjowidjojo, 2003a, p. 50).
English is currently seen as an important language for national development. English is an essential instrument to provide access to international markets, scientific knowledge and expertise. People in Indonesia need to be given opportunity to learn English since it can influence Indonesian development in the future. Along with the rapid development of information and technology in the internet, learning English as a foreign language is seen as a 'must'. This is because "those who have a good command in a foreign language have great advantage over the ones who do not" (Mirici, 2003, p. 1). Learning English is necessary for economic development, and for the advancement of modern multimodal technology. Many textbooks and international journals that deal with rich information on modern knowledge and technology that are needed for national development are published in English.

Moreover, English is not only a requirement for looking for a job, but it is also being seen as symbols of education, modernity, and even sophistication. Therefore, it is necessary to understand that modernization and Westernization are different. The feeling of worry about losing local values is partly because of a desire to maintain the local values and culture to continue to live in the local and national society. However, attempting to gain from new experience and new knowledge is also necessary to broaden views that every country is different. It is important for Indonesia to become a modern country without being afraid to become a modern country. It is necessary for Indonesia to be actively involved in international activities without sacrificing its national (local) identity.

Lowenberg (1991) suggested that in acknowledging the essential nature of English in Indonesian development and modernization, it was important to see English as an 'additional' language rather than merely as a foreign language. It was particularly important when it was linked to the high status of English as the global language. Another approach would be upgrading the status of English as a foreign language to be used as a second language. English could be employed as a medium of instruction in education and as a tool of communication in the workplace. Giving Indonesian
people the opportunity to develop communication skills by using English more frequently would increase their opportunities to participate competitively in the global market.

## Appendix 4.1A: Language Proficiency versus Literacy

Briere (1972, cited in Denham 1985, p. 13) defined tests of language proficiency as
The capability in a given language demonstrated by an individual at a given point in time independent of a specific text book, chapter in a book or pedagogical method.

This statement emphasizes the individual's performance at a specific point in time. Understanding this definition of achievement and proficiency can be linked to Krashen's Monitor Theory (1981) that emphasizes the difference between 'acquisition and formal classroom instruction'. Achievement was closely related to formal classroom instruction since the individuals gained language knowledge from a structured syllabus. The curriculum or syllabus contained course content that was first taught formally in classroom settings, and finally tested at the end of the course. These characteristics were consistent with learning language through formal classroom instruction.

Thus proficiency was closely related to acquisition since students gained linguistics and knowledge from unknown sources. Learning in this way could take place either through formal instruction or in informal settings that might involve picking up words in the playground, travelling overseas, or chatting to native-speakers of English.

## Literacy

There are many definitions of literacy (Harris and Hodges, 1995). The definitions of literacy have changed over time in accordance with the needs of the society, the demands for economic development, and advances in the research and measurement of literacy itself. Much scholarly work has been expended on efforts to reach a categorical and conclusive definition of literacy. However, some scholars believed that "... agreement on a definition and thus on a measurement of literacy will never be reached ..." (Wickert, 1992, p.30). The range of literacy definitions varied from a skills-based conception of functional literacy through to broad definitions. Lo Bianco and Freebody (2001) contended that all definitions integrated social and
political empowerment. Although there were a number of definitions of 'literacy', it was necessary to develop a coherent understanding of the idea of 'literacy' that reflected the many capabilities required to become a participating member of a literate society.
Psychologists, linguists, educators, sociologists and others have all been contributors to knowledge about literacy over the past 40 years. Consequently, definitions of literacy have differed on several dimensions (Lo Bianco \& Freebody, 2001, p.20):

Whether or not literacy refers to a set of varied capabilities or to a single capability that can be quantified (e.g., into "level of ability") in a straightforward and comprehensive way; whether or not literacy refers to capabilities distinct from other language-related activities; and the extent to which acquisition of certain basic literacy capabilities is an insurance against all possible literacy problems.

It was widely accepted that literacy generally was simply defined as "the ability to read and write". Some attempts have been undertaken to classify people who were literate and people who were illiterate based on this definition. Researchers, however, found it impossible (Elley, 1989) to do this task as "there is no precise dividing line between a person who is fully literate and one who is not" (OECD, 2003, p.17). Literacy has generally been defined on a sliding scale of three or five or six or eight years of schooling, regardless of quality, or student learning outcomes, or community expectations (Scribner, 1984). The main problem with linking the definition of literacy to years of schooling has been that some children survived long periods of formal education without acquiring the skills of reading and writing, while others learnt to read and write outside the school system (Elley, 1989).
However, some research workers in the field of literacy have reconceptualized the term 'literacy'. Literacy could no longer be simply defined in terms of reading, writing or numeracy nor could it be seen as an end in itself (UNESCO, 1997). The rapid changes in science and technology suggested that "people must be able to adapt continually to developments in science, technology and to the pressures of social integration, participation and democratisation" (UNESCO, 1997, p.10).

This gives rise to the use of such terms as 'scientific literacy', 'mathematical literacy', 'computer literacy', and 'visual literacy'. This also indicates that the world is more visual than before so that understanding images is just as important as understanding words, and consequently different skills are demanded.

## Appendix 4.2A: A discourse and Discourse

The term 'discourse' has several meanings and is used in many different ways in the research in both linguistics and literacy. In this study, the term 'Discourse' (with capital 'D'), as Gee (1990) suggested, is used. A 'discourse' was part of big 'Discourse'. 'Discourse' identified more than just language, while 'discourse' was used for "connected stretches of language (spoken, written, signed) that made sense, like conversations, stories, reports, arguments, essays" (Gee, 1990, p. 103). Gee (1990, p. 103) stated that

But making sense is always a social and variable matter: what makes sense to one community of people may not make sense to another. To understand sense making in language, it is also necessary to understand the ways in which language is embedded in the larger framework of social relationships and social institutions.

A Discourse (with capital 'D') as Gee (1990, p. 143) pointed out was
A socially accepted association among ways of using language, of thinking, feeling, believing, and valuing, and of acting that can be used to identify oneself as a member of a socially meaningful group or 'social network', or to signal (that one is playing) a socially meaningful 'role'.

Furthermore, Gee (1990, p. xv) added that in this context
A role is a combination of saying the right sorts of things in the right way, while engaging in the right sorts of actions and interactions, and appearing to think and feel the right way and have the right sorts of values.

Integral combinations of 'sayings-doings-thinkings-feelings-valuings' were called 'Discourses'. Saying something 'right' was influenced by the society people moved within, while engaging in the right Discourse was not influenced by teaching and instruction in the classroom. However, social practices that have developed over time (Gee, 1990) did help people become members of Discourses. Gee (1990, p. xv) stated that

You learn the Discourse by becoming a member of the group: you start as a 'beginner', watch what's done, go along with the group as if you know what you're doing when you don't, and eventually you can do it on your own, even with something of your own style. By the time you're an expert, however, you often can't say what you do, how you do it, or why. Though you could show someone.

There are some examples of sites where Discourses operate to integrate persons, groups, and society. Homes, schools, universities, bars, libraries, gangs, churches, mosques, teachers associations, researchers group, business groups and social networks, as well as international forums are examples of sites where people can learn how to become members of Discourses. Becoming a member of a Discourse is not only concerned with what people say and how they say it, but this is also concerned with what people are and do while they say it. As member of a Discourse, people need to play the role that is applied in the sites where they become a member of the Discourse since different Discourses require different roles.

## Appendix 4.3A: Linking Proficiency to Literacy and Discourses

Gee (1990, p. 153) defined literacy as "mastery of, or fluent control over secondary Discourses involving print".

Many print forms were available in modern society. Texts and technology such as painting, literature, films, face book, videos, web-cameras, computers, and telecommunication involved different forms of print. They led to definitions of a variety of types of literacies such as media literacy, computer literacy, information literacy, visual literacy and language literacy. Therefore, 'literacies' in the plural form were involved and were taught or acquired (Gee, 1990). Moreover, Gee (1990) argued that

How a community uses print to take meaning from the environment and how they use knowledge gained from print are interdependent with the ways children learn language and are socialized in interaction with peers and care-givers. Language learning and socialization are two sides of the same coin. (p. 64)

This statement emphasizes the importance of language learning and interaction with society. Interaction is not necessarily in the form of direct or face to face interaction in the society. This can be done indirectly through phone interaction, electronic mail, chat through the internet, or visual presentation. Moreover, interaction can occur in non-formal settings such as chance meetings in the playground, street, supermarket or corner of the road, or formal settings such as teaching and learning in the classroom or meetings conducted in formal forums. In addition, interaction does not only occur between human, interactions with books, with television, with computer,
and with the news on the radio also take place. Such interactions through social practices in the community were captured by Gee (1996) as 'Discourses'.

Consequently, it can be argued that being proficient in English enables learners of English to be literate in modern society. The learners of English are literate in using the computer, media, reading, and writing as well as passing information that they know onto other people. In interaction and communication with other people, these people are required to use a language adequately that makes sense to others in order to be apprenticed in their Discourses.

Gee (1990) emphasized that what was important in their Discourses was
not just how you say it (how you use the grammar, that is, how you formulate a message given the context it is said in), but what you are and do when you say it. (p. 138)

In addition, Gee (1990, p. 139) argued that
It is a truism in the literature now, but one we nonetheless must hold constantly in mind, that a person can know the grammar of a language and still not know how to use that language.

The reason was because
What is important in communication is not speaking grammatically, but saying the 'right' thing at the 'right' time and in the 'right' place. (Gee, 1990, p. 139)

However, it is possible that through the impact of globalization the 'right' time and the 'right' place are changing rapidly.

## Appendix 4.4A: Macro-skills in English: Reading, Listening, Writing, and Speaking

## Reading Comprehension and Communication

Teaching and learning reading are not easy tasks for both teachers and students (Ainley \& Fleming, 2000, 2003; Ainley, Fleming \& McGregor, 2002) and a substantial number of learners struggle to perform the task. Great amounts of time, money, and energy were spent teaching reading in elementary and secondary schools around the world (Nunan, 1999). There was no aspect of teaching anywhere in the world that was more important than teaching reading (as well as writing, speaking and listening, and viewing) as these skills were the foundations for other learning. Perhaps, it was true to say that teaching reading was more likely to involve more time than any other skill since being able to read was the most valuable asset for a
nation's social and economic development and has become "the mark of the educated person" (Nunan, 1999, pp. 249-250).
Bernhardt defined reading comprehension as a "constructive" and "active process" that entailed "relating new and incoming information to information already stored in memory" (1991, p. 191). This was called an "active process" because there was interplay between text-based components, such as word and syntactic feature recognition, and extra-text or reader-based components, such as pre-existing knowledge and the perception of explicit and implicit intra-textual relationships (Bernhardt, 1986). Wolf (1993, p. 3) argued that
"These components interact differently according to text topic, rhetorical organization, readers' background knowledge, and linguistic proficiency. As a result of these numerous reader and text variables, there cannot be one true comprehension but rather a range of comprehension.

Nunan (2003) also argued that reading was "a fluent process of readers combining information from a text and their own background knowledge to build meaning" ( p . 68). Additionally, Nunan (2003, p. 68) suggested that "meaning does not rest in the reader nor does it rest in the text as the reader's background knowledge integrates with text to create the meaning". This was supported by the further argument that "the process of comprehending involves decoding the writer's words and then using background knowledge to construct an approximate understanding of the writer's message" as reading comprehension was the process of constructing meaning from text (Lenz, 2005, p. 1). This strongly suggested that "understanding a piece of discourse involved much more than just knowing the language" (Harmer, 2005, p. 199). Moreover, having "pre-existent knowledge of the world" (Cook, 1989, p. 69) was essential in order to make sense of any text.

## Listening Comprehension

Listening is an important component of the process of foreign language acquisition.
Feyten (1991, p. 5) studied the relationships between listening ability and foreign language (FL) acquisition. He found that

1. There were significant correlations between listening ability and overall FL acquisition. In other words those with high listening ability at the beginning made most general progress on the course by the end.
2. There were correlations between listening ability and oral proficiency skills.
3. Listening ability predicted FL proficiency better than sex, length of previous language exposure, which language (French or Spanish) they had studied on the course and the students' last contact with the language they studied on the course.

Rost (2002) argued that listening could be viewed as a process of receiving information from the speaker (receptive orientation); constructing and representing meaning (constructive orientation); negotiating meaning with the speaker and responding ( collaborative orientation); and creating meaning through involvement, imagination and empathy (transformative orientation). Thus, listening was an active process which included comprehending the message content and an act of empathetic understanding of the speaker. Gordon (1985) argued the importance of empathy in listening and contended since it was not only to identify a speaker's perspectives but also to expand to "egocentric pro-social behaviour". Moreover, listening was an active process in learning at the university level because it required skills such as prediction, hypothesizing, checking, revising, and generalizing (Ronald and Roskelly, 1985).

In all academic learning, capabilities relative to listening comprehension were obviously of great importance to learners. Several studies had suggested that acquiring a foreign language could be achieved through exposure to authentic input, which could largely be achieved through listening (Carter and Nunan, 2001, p. 8). However, Nunan (1998) argued that listening was the Cinderella skill in both second and foreign language learning and that all too often, it had been overlooked by its elder sister: speaking. Listening, which was regarded as a receptive skill in language learning, was a less thoroughly studied skill in general. Thus, it was not surprising that listening was also regarded as the most difficult skill by most foreign language learners, and for "the same reason, it has proved to be the most difficult skill to research" (Ling, 2008, p. 1).

## Appendix 4.5A: Factors that Influence English Language Proficiency

## Learning Situation

Norton and Toohey (2001) emphasized that the learning situation contributed to successful learning. The learning situation can vary considerably from learning a second language in the language target country (naturalistic) to learning language in formal classroom instruction. In the classroom, time of day instruction also differs. In
turn, classroom may be conducted in the morning, afternoon, or at night. These different learning situations may influence learning English proficiency.

## Language learning Strategies

Bacon (1992) carried out a study on sex differences in listening strategies used by men and women. Fifty university students who had been judged to be motivated but not particularly highly proficient in Spanish (English L1) participated in that study. Participants were required to listen to two texts: (a) narrative text about the US historical mobile home (culturally accessible for American students); and (b) electric converter for travelling (more difficult and less culturally accessible). Participants were asked to write strategies they used when they were listening. Bacon (1992) found that there were significant differences in strategy use between male and female students. The findings were:

1. Narrative passage was easier to understand and students, therefore, were able to write about strategies they used.
2. Men used less meta-cognitive strategies than women and were less likely to use meta-cognitive strategies to handle difficult passages.
3. Men were less consistent in their use of cognitive strategies than women, perhaps men were less likely to practise listening strategies.
4. Women kept thinking in Spanish.
5. Men were more confident in expressing their feelings.
6. Men tended to translate every word.
7. Although males and females used different strategies, they did not have significantly different in achievement.

This emphasizes that different individuals used different strategies due to the different patterns of processing involved.
Much research has shown that more proficient learners employed strategies that were different from those used by less proficient learners (Oxford and Crookall, 1989 cited in Gardner and MacIntyre, 1992, p. 217). However, there has not been clarification whether strategies influenced learning, or that learning itself enabled different learning strategies to be used.
Griffiths (2008, p. 89) had found that
The statistics indicate that higher level students report more frequent use of a larger number of language learning strategies than do lower level students, suggesting a generally positive relationship between the higher level language learner and language learning strategy use. Some studies had discovered that poor language learners used a great many ineffective strategies in their efforts to learn that led them to be
unsuccessful learners (Porte, 1988; Vann and Abraham, 1990 cited in Griffiths, 2008, p. 89).

However, what must be remembered is


#### Abstract

We must remind ourselves that we should not impose strategy use on learners but make learners aware of the range of strategies available and that a different response may be needed according to the type of passage they are listening to. Finally we should remind ourselves that strategy use needs to be evaluated for its effectiveness. (Bacon, 1992, cited in Macaro, 2003, p. 164)


## Factors that Influence the Success of Learning English: Indonesian Context

Although in Indonesia English is taught formally in schools and universities, it is not taught without many problems. In spite of time and efforts being invested in learning English, the learning and teaching of English in Indonesia is seen to be problematic. It is difficult for Indonesian students to develop their English language proficiency. There were many factors that contributed to the lack of success of learning English in Indonesia. Musthofa (2001) argued that: (a) limited time was allocated to teaching English; (b) limited time was given to practising speaking in the classroom, since the teaching strategies employed were dominated by focusing on grammar and language structure; (c) the unavailability of authentic learning materials; and (d) the limited use of English outside the classroom were among the factors that operated to limit the success of learning English in Indonesia. The first and second factors were specified in terms of time. Although Musthofa (2001) did not mention clearly where his ideas came from, these factors could be closely related to Carroll's model of foreign language learning (1962; 1963; 1975) which also had time clearly specified in the variables.
The curriculum and approaches to the teaching of English that changed after the appointment of a new Ministry of Education who sought to contribute to the successful learning of English (Dardjowidjojo, 2000; Nur, 2003). The continual revising of the curriculum was not always accompanied by a willingness of teachers to implement the new curriculum and approaches. The policy makers also did not consider factors such as time available for teaching English, the availability of resources and facilities, such as multimodal technology and the strategies to cope with the many problems that needed to be solved, in order that the new curriculum was well implemented (Yuwono, 2005).

## Appendix 6.1A: Secondary Data Analysis

## Reasons for Using Secondary Data Analysis

Secondary data analysis involved the reexamination of previously collected data (Black, 1995). Since secondary analysis fitted into a framework that involved several different types of educational research (Walberg, 1986), there was growing interest in the reexamination or reanalysis of previously collected data using recently developed analytical procedures (Walberg, 1998). One objective of using secondary data was "to explore whether the re-analysis of primary data using a different methodology would yield a different outcome" (Andrews, Higgins, Andrews, and Lalor, 2012, p. 1). Many research workers in the School of Education at Flinders University had successfully used and analyzed secondary data. The results of their analyses had been published internationally and were used extensively as references by these research workers in scholarly published journal articles and books.

It has also been suggested that secondary analysis was a more convenient approach for particular researchers, notably students (Szabo \& Strang, 1997). However, because of the nature of the secondary data, it has also been argued that the approach was better only when employed by experienced researchers (Thorne, 1994). This argument was based on the points of view that the researcher was not part of the original research team and that there were particular difficulties of doing secondary analysis in an independent capacity. Therefore, consultation with the primary researcher(s) might need to be undertaken, with the assumption that they were available, in order to investigate the circumstances of the original data generation and processing. Although the use of secondary analysis did not necessarily preclude the possibility of collecting data, the obtaining of additional data or pursuing in a more controlled way the findings that emerged from the initial analysis might be required (Heaton, 1998).
While a researcher might carry out a secondary analysis using his or her own data, data from another investigator, or data collected for purposes other than research (Herron, 1989; Black, 1995), it has been argued that

Secondary analysis can be used to generate new knowledge, new hypotheses or support for existing theories; that it reduces the burden placed on respondents by negating the need to recruit further subjects; that it allows wider use of data from rare or inaccessible respondents. (Heaton, 1998, p.1)

Nevertheless, the key characteristics of all secondary data analysis were that the data being used were originally collected for some purposes other than to answer the research question under current consideration (Finlayson \& Black, 1999).
Despite the interest in and arguments for undertaking secondary data analysis, there are methodological and ethical considerations that need to be taken into account.

## Methodological and Ethical Consideration

Thorne (1994) contended that in the research literature attention to the principles of and guidelines for the conduct of secondary data analysis had been poorly treated. However, some research workers had begun to highlight a number of practical and ethical considerations involved in conducting such analysis (Hinds, Vogel \& ClarkeSteffen, 1997; Thorne, 1994; Szabo \& Strang, 1997) and have advanced four key issues.
(1) Compatibility of the data with secondary analysis. Compatibility is about whether or not the data are amenable to secondary analysis. Thorne (1994) argued that the fit of the purpose of the analysis and the nature and quality of the original data needed to be assessed since the nature of the data determined whether it was possible or not to conduct additional in-depth analysis. For example, while structured interviews tended to limit the range of responses, semi-structured interviews were more likely to produce more rich and varied data. Checking for the relevancy of missing data to the secondary analysis and its relevancy to the original study might also be required. In undertaking secondary analysis, assessing the quality of the original data was also necessary.
(2) Position of the secondary analyst. The problem about the position of the analyst of secondary data involved whether or not the researcher was part of the research team and it was also related to the decision of whether or not to use secondary data. If the researchers were not involved in the original study, they needed access to the original data, including tapes (if there were interviews) and field notes, in order to re-examine the data with the new focus in mind. The researchers then needed to consult with the primary researcher(s) in order to assess the original work and consider the nature of the material (rather than just rely on field notes). Furthermore, in order to obtain access to the data, the researchers might also be required to negotiate some forms of contractual
agreement between the secondary researchers and primary researchers, data archive managers and colleagues involved in the primary analysis but not in the secondary analysis.
(3) Reporting of original and secondary data analysis. Because of the complexity of the secondary data analysis, the study design, method and issues involved needed to be fully reported. Ideally this included how the data were collected, the instruments used in the collection, together with a description of the processes involved in categorizing and summarizing the data for the secondary analysis, as well as how to address the methodological and ethical considerations involved in using the secondary data (Thorne, 1994).
(4) Ethical issues. Ethical issues were involved in obtaining consent to use the original data. Where sensitive data were involved, the researcher could not presume that informed consent would be given, and it was usually not feasible to seek additional consent. Thus, a professional judgement might have to be made about whether reusing the data violated the contract made between subjects and the primary researchers (Hinds, Vogel \& Clarke-Steffen, 1997, cited in Heaton, 1998 p.2).

The British Sociological Association (2004, p. 3) has publicly stated these issues in the following terms

Growing interest in reusing the data make it imperative that researchers in general now consider obtaining consent which covers the possibility of secondary analysis as well as the research in hand; this is consistent with professional guidelines on ethical practice.

However, the guidelines also stated:
It should be borne in mind that in some research contexts, especially those involving field research, it may be necessary for the obtaining of consent to be regarded, not as a once-and-for-all prior event, but as a process, subject to renegotiation over time. (BSA, 2004, p. 3)

On the question of whether consent should be ongoing or re-established, Wiles, Heath and Crow, (2005) said:

On the one hand...[it] ensures people know to what they are consenting as the focus and the direction of a study changes. Addresses participants' tendency to disregard the information about participation that they are given. On the other...One off consent is adequate; seeking ongoing consent irritates participants and encourages them to withdraw from participation. (original emphasis: no page number)

The UK Data Archive (UKDA) guide for researchers reiterates many of the points above

Data sharing beyond the research can be a one-off occurrence or an ongoing process. One-off consent is simple, practical, avoids repeated requests to participants, and meets the formal requirements of most Research Ethics Committees. However, it may place too much emphasis on 'ticking boxes'. If consent is considered throughout the research process, it assures active informed consent from participants. Thus, data sharing can be considered at different stages of the research, giving participants a clearer view of what participating in the research involves and what the data to be shared consist of. It may, however, be too repetitive and annoying for some participants. Special consent considerations are needed for: medical research, research with children and young adults, research with people with learning difficulties, research within organisations or the workplace, research into crime, internet research. (UKDA 2009:19)

Therefore, Grinyer (2009, p. 2) concluded:
Exactly what the 'special consent considerations' might be is open to interpretation, and it is possible to argue that the perceived 'vulnerability' of some of those on the above list necessitates either obtaining further consent or alternatively avoiding the risk of causing unnecessary anxiety by renegotiating such consent.

## Secondary Data Analysis and Educational Research

Traditionally it was contended that psychology was the academic discipline that had had the most influence on educational research. It has been argued that research workers in the area of psychology had generally preferred "direct observations of small local samples, and have tended to study the more observable and proximal causes of learning" (Walberg, 1998, p.3). In order to answer research questions, psychologists with interests in growth and development, for example, had often used longitudinal data sets. In addition, questionnaire or pre-collected data had also been used by psychologists with an interest in individual differences in abilities or in measuring attitudes that related to educational issues and problems. Since the nature of psychological research commonly involved focusing on specific issues, the researchers were required to control experimentally for extraneous factors (Walberg, 1998). Consequently the use of secondary data in statistical analysis in educational research was slight. This preference of psychologists to use certain kinds of research procedures involving experimentation had historically contributed to the limited use of the secondary analysis of such data in educational research.

Lack of the skills and experience that were needed to carry out such analyses was also another burden facing those who sought to engage in secondary data analysis. Analyzing secondary data did not simply involve putting the data into a computer and running it, because the data sometimes were not ready for use. Thus the researchers must first check and examine the data carefully. At this stage, the secondary data analyst often sought out those who could resolve various discrepancies in the source documents. There were many issues to be resolved concerning the integrity of the data and the meaning of the data. In particular, hypothetical models of the structural relations among major factors were hypothesized and examined using a variety of multivariate statistical techniques such as Hierarchical Linear Modelling (HLM), Path Analysis, Partial Least Squares Path Analysis and Structural Equation Modelling (SEM), consequently considerable skill and experience were required. The secondary data analysts often sought out people who could help them in analyzing the secondary data.

It also frequently happened that the secondary analyst faced problems relating to issues of interest that might be poorly represented or even absent from the data archive, for example the questionnaire might be poorly designed and inadequate data-gathering techniques had been employed. It was important in such cases to detect such inconsistencies and inadequacies in the data to employ procedures that could resolve such issues and problems.

## Appendix 6.2A: Variables for the Study under Investigation by Level

Table 6.1A Variables for the Study under Investigation by Level

| Occasion-level Variables |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Latent Variable |  | Manifest Variate | Source | Coding | Mode of LV in Model |
| Acronym | Acronym | Description |  |  |  |
| CHANGE VARIABLES |  |  |  |  |  |
| PRETEST | LIST-PRETEST | Listening Pretest Score | FILE | IRT- scaled Score | Outward |
|  | READ-PRETEST | Reading Pretest Score | FILE | IRT- scaled Score | Outward |
|  | WRIT-PRETEST | Writing Pretest Score | FILE | IRT- scaled Score | Outward |
| DIAGNOST | LIST-DIS | Listening Diagnostic Score | FILE | IRT- scaled Score | Outward |
|  | READ-DIS | Reading Diagnostic Score | FILE | IRT- scaled Score | Outward |
|  | WRIT-DIS | Writing Diagnostic Score Listening English Language Proficiency | FILE | IRT- scaled Score | Outward |
| ELPT | LIST-ELPT | Score <br> Reading English Language Proficiency Score Writing English Language Proficiency Score | FILE | IRT- scaled Score | Outward |
|  | READ-ELPT |  | FILE | IRT- scaled Score | Outward |
|  | WRIT-ELPT |  | FILE | IRT- scaled Score | Outward |
| Student-level Variables |  |  |  |  |  |
| Latent Variable |  | Manifest Variate | Source | Coding |  |
| Acronym Acronym |  | Description |  |  |  |
| STUDENT BACKGROUND |  |  |  |  |  |
| AGE_Begin <br> AGE_End GENDER | AGE_ | Age When Student Enters the University <br> Age When Students Completes the University Sex of Student | FILE | $\begin{aligned} & \text { 0= Young; } \\ & \text { 1= Old } \end{aligned}$ | Unity |
|  | AGE |  |  |  |  |
|  | GENDER |  | FILE | $\begin{aligned} & \text { 0= Male; } \\ & \text { 1= Female } \end{aligned}$ | Unity |
| SES |  | Father occupation Mother occupation Parents Salary | FILE |  | Outward |
|  |  |  | FILE |  | Outward |
|  |  |  | FILE |  | Outward |

Table 6.2A (Continued)


## Appendix 7.1 A: English Foreign Language Proficiency Test Instrument

## Instrument I: Performance Test

## Listening Comprehension Test

The first section of the English Language Proficiency Test was the Listening Comprehension section. There were three parts in the Listening Comprehension section of the English Language Proficiency Test:

1. Part A consisted of 30 short conversations, each followed by a question.
2. Part B consisted of 2 long conversations, each followed by a number of questions.
3. Part C consisted of 3 talks, each followed by a number of questions.

## The Listening Part A Questions

For each of the 30 questions in Part A of Listening Comprehension section of English Language Proficiency Test, test takers heard a short conversation between two speakers followed by a question.

Example :
On the recording, test takers hear :
Man : I've always wanted to visit Hawaii with you.
Woman : Why not next month?
Narrator : What does the woman mean?
In our test book, we read:
(A) Next month isn't a good time for the trip.
(B) She doesn't want to go to Hawaii.
(C) She suggests taking the trip next month .
(D) She's curious about why he doesn't want to go.

Writing (Structure \& Written Expression Test)
The second section of the English Language Proficiency Test was the Writing (Structure and Written Expression) section. This section consisted of 40 questions. The time to complete the 40 questions in this section was 25 minutes.

There were two types of questions in the Structure and Written Expression section of the test:

Structure (questions 1-15) consisted of 15 sentences in which a part of a sentence had been replaced with a blank. Each sentence was followed by four answer choices.

The student must choose the answer that completes the sentence in a grammatically correct way.

Written Expression (questions 16-40) consisted of 25 sentences in which four words or groups of words have been underlined. The student must choose the underlined word or group of words that was not correct.

## The Structure Questions

The questions in this section were multiple-choice questions in which the student must choose the letter of the answer that best completed the sentence.

Example:
-------------is taking a trip to Paris.
( A ) They
( B ) When
( C ) The Woman
(D) Her

## The Written Expression Questions

Each question in this section consisted of one sentence in which four words or groups of words had been underlined. Students must choose the underlined word or group of words that was not correct.

Example:

1) The final delivery of the day $\frac{\text { is }}{\mathrm{B}} \mathrm{C}$ the $\frac{\text { importantest. }}{\mathrm{D}}$

## Reading Comprehension Tests

Reading Comprehension was the third section of the test. The Reading Comprehension test consisted of 50 small questions. The students were required to finish the test in 55 minutes, including the reading of the directions. This section was designed to measure students' ability to read and understand short passages in order to choose the correct answer. In this section the students read several passages. Each one was followed by a number of questions about it. The students were required to choose the one best answer, (A), (B), (C), or (D), to each question

The type of item employed in the Reading tests were, in the main, multiple choice items with four options, and the students had to choose the correct alternative by colouring in the bubbles next to their answer. For the Reading tests, the students were required to go through reading materials that were provided. The reading materials and the question paper were provided on separate forms, and the reading materials were provided in the form of a small magazine. Before the students
answered the questions presented in the reading test, they were first instructed to read the material in a specific section of the magazine. Written instructions were provided in the question paper so that it was easily read and the students could carry out the test effectively.

## Example of Reading Comprehension Test

The questions in this section were multiple-choice questions in which the students must choose the letter of the answer that best completed the sentence.

## Passage

Nitrogen fixation is a process by which nitrogen is continuously fed into biological circulation. In this process, certain algae and bacteria convert nitrogen into ammonia $\left(\mathrm{NH}_{3}\right)$. This newly created ammonia is then for the most part absorbed by plants.

The opposite process of de-nitrification returns nitrogen to the air. During the process of de-nitrification, bacteria cause some of the nitrates from the soil to convert into gaseous nitrogen or nitrous oxide $\left(\mathrm{N}_{2} \mathrm{O}\right)$. In this gaseous form the nitrogen returns to the atmosphere.

The question:
Which of the following would be the best title for this passage?
(A) The Process of Nitrogen Fixation
(B) Two Nitrogen Processes
(C) The Return of Nitrogen to the Air
(D) The Effect of Nitrogen on Plant Life

## Appendix 7.2A: Scoring Information for English Foreign Language Proficiency Test

Table 7.2A Scoring Information for English Foreign Language Proficiency Test ${ }^{1}$

| Number Correct | Converted Score Section 1 | Converted Score Section 2 | Converted Score Section 3 |
| :---: | :---: | :---: | :---: |
| 50 | 68 | - | 67 |
| 49 | 67 | - | 66 |
| 48 | 66 | - | 65 |
| 47 | 65 | - | 63 |
| 46 | 63 | - | 61 |
| 45 | 62 | - | 60 |
| 44 | 61 | - | 59 |
| 43 | 60 | - | 58 |
| 42 | 59 | - | 57 |
| 41 | 58 | - | 56 |
| 40 | 57 | 68 | 55 |
| 39 | 57 | 67 | 54 |
| 38 | 56 | 65 | 54 |
| 37 | 55 | 63 | 53 |
| 36 | 54 | 61 | 52 |
| 35 | 54 | 60 | 52 |
| 34 | 53 | 58 | 51 |
| 33 | 52 | 57 | 50 |
| 32 | 52 | 56 | 49 |
| 31 | 51 | 55 | 48 |
| 30 | 51 | 54 | 48 |
| 29 | 50 | 53 | 47 |
| 28 | 49 | 52 | 46 |
| 27 | 49 | 51 | 46 |
| 26 | 48 | 50 | 45 |
| 25 | 48 | 49 | 44 |
| 24 | 47 | 48 | 43 |
| 23 | 47 | 47 | 43 |
| 22 | 46 | 46 | 42 |
| 21 | 45 | 45 | 41 |
| 20 | 45 | 44 | 40 |
| 19 | 44 | 43 | 39 |
| 18 | 43 | 42 | 38 |
| 17 | 42 | 41 | 37 |
| 16 | 41 | 40 | 36 |
| 15 | 41 | 40 | 35 |
| 14 | 37 | 38 | 34 |
| 13 | 38 | 37 | 32 |
| 12 | 37 | 36 | 31 |
| 11 | 35 | 35 | 30 |
| 10 | 33 | 33 | 29 |
| 9 | 32 | 31 | 28 |

Table 7.2A (Continued)

| 8 | 32 | 29 | 28 |
| :--- | :--- | :--- | :--- |
| 7 | 31 | 27 | 27 |
| 6 | 30 | 26 | 26 |
| 5 | 29 | 25 | 25 |
| 4 | 28 | 23 | 24 |
| 3 | 27 | 22 | 23 |
| 2 | 26 | 21 | 23 |
| 1 | 25 | 20 | 22 |
| 0 | 24 | 20 | 21 |

${ }^{1}$ The users should first use the chart to determine your converted score for each section. Suppose that the users got 30 correct in the first section, 28 correct in the second section, and 43 correct in the third section. The 30 correct in the first section means a converted score of 51 . The 28 correct in the second section means a converted score of 52 . The 43 correct in the third section means a converted score of 58. (See the chart below.)

|  | Section 1 | Section 2 | Section 3 |
| :--- | :--- | :--- | :--- |
| Number Correct | 30 | 28 | 43 |
| Converted Score | 51 | 52 | 58 |

Next, the users should determine their overall score in the following way:

1. Add the three converted scores together: $51+52+58=161$
2. Divide the sum by $3: 161 / 3=53.7$
3. Then multiply by $10: 53.7 \times 10=537$

The overall score in this example is 537

## Appendix 7.3A: Descriptive Statistics for Rank-Scaled Scores

Descriptive Statistics for Rank-Scaled Scores

|  | N | Minimum | Maximum | Mean | Std. Deviation |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Physic | 3995 | 1.40 | 10.00 | 7.39 | 1.07 |
| Math | 3995 | 2.50 | 10.00 | 7.41 | 1.56 |
| English | 3995 | 1.37 | 10.00 | 7.79 | 1.18 |
| Engl_1 | 3995 | 1.00 | 4.00 | 2.96 | .68 |
| Bahasa_s | 3995 | 1.00 | 4.00 | 2.88 | .77 |
| Engl_2 | 3995 | 1.00 | 4.00 | 2.73 | .73 |
| GPA_s | 3995 | 1.69 | 3.89 | 3.15 | .26 |
| Valid N (listwise) | 3995 |  |  |  |  |

Appendix 7.4A: Descriptive Statistics for IRT-Scaled Scores Grade Sample
Table 7.3A Descriptive Statistics for IRT-Scaled Scores Grade Sample

|  | N | Minimum | Maximum | Mean | Std. Deviation | Skewness |  | Kurtosis |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| LISTEN_PRE | 4052 | 28 | 64 | 40.93 | 4.99 | . 29 | . 038 | . 62 | . 077 |
| WRIT_PRE | 4052 | 30 | 68 | 41.66 | 5.32 | . 24 | . 038 | . 64 | . 077 |
| READ_PRE | 4052 | 24 | 66 | 42.25 | 5.64 | . 09 | . 038 | . 12 | . 077 |
| LISTEN_DIS | 2315 | 24 | 67 | 46.96 | 5.68 | . 11 | . 051 | . 79 | . 102 |
| WRIT_DIS | 2315 | 23 | 65 | 42.98 | 6.31 | . 15 | . 051 | . 18 | . 102 |
| READ_DIS | 2315 | 25 | 53 | 40.52 | 4.73 | -. 48 | . 051 | -. 01 | . 102 |
| LISTEN_ELPT | 2376 | 24 | 68 | 53.78 | 6.03 | -. 37 | . 050 | . 53 | . 100 |
| WRIT_ELPT | 2376 | 20 | 68 | 47.11 | 6.30 | . 20 | . 050 | . 50 | . 100 |
| READ_ELPT | 2376 | 22 | 67 | 47.76 | 5.72 | . 03 | . 050 | . 71 | . 100 |
| Valid N (listwise) | 1978 |  |  |  |  |  |  |  |  |

## Appendix 7.5A: Descriptive Statistics for IRT-Scaled Scores for IRT Sample

Descriptive Statistics for IRT-Scaled Scores for IRT Sample

|  | N | Minimum | Maximum | Mean | Std. Deviation | Skewness |  | Kurtosis |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| LISTEN_PRE | 4052 | 28 | 64 | 40.93 | 4.99 | . 29 | . 038 | . 62 | . 077 |
| WRIT_PRE | 4052 | 30 | 68 | 41.66 | 5.32 | . 24 | . 038 | . 64 | . 077 |
| READ_PRE | 4052 | 24 | 66 | 42.25 | 5.64 | . 09 | . 038 | . 12 | . 077 |
| SCORE_PRE | 4052 | 310 | 657 | 416.15 | 44.61 | . 59 | . 038 | . 91 | . 077 |
| LISTEN_DIS | 2315 | 24 | 67 | 46.96 | 5.68 | . 11 | . 051 | . 79 | . 102 |
| WRIT_DIS | 2315 | 23 | 65 | 42.98 | 6.31 | . 15 | . 051 | . 18 | . 102 |
| READ_DIS | 2315 | 25 | 53 | 40.52 | 4.73 | -. 48 | . 051 | -. 01 | . 102 |
| WHOLE_DIS_SCORE | 3098 | 260 | 630 | 448.20 | 51.34 | . 25 | . 044 | -. 02 | . 088 |
| LISTEN_ELPT | 2376 | 24 | 68 | 53.78 | 6.03 | -. 37 | . 050 | . 53 | . 100 |
| WRIT_ELPT | 2376 | 20 | 68 | 47.11 | 6.30 | . 20 | . 050 | . 50 | . 100 |
| READ_ELPT | 2376 | 22 | 67 | 47.76 | 5.72 | . 03 | . 050 | . 71 | . 100 |
| WHOLE_ELPT_SCORE | 2424 | 80 | 636 | 449.06 | 132.35 | -1.61 | . 050 | 1.39 | . 099 |
| ENGLISH_II | 5335 | 1.00 | 4.00 | 2.76 | . 74 | . 26 | . 034 | -. 98 | . 067 |
| Valid N (listwise) | 1894 |  |  |  |  |  |  |  |  |

## Appendix 8.1A: Criterion-Scaled Scoring

## Father's Occupation

The information obtained from the University files classified the occupations of fathers into 12 categories. These categories which were classified by the policy decision makers are listed in Table 8.1A. Efforts were made to try to find a report on the scaling of these occupations by Indonesian Universities, and only one study of the criterion scaling of occupational data for Indonesian students was located, (from a study of school students by Mohandas (2002)). Table 8.1A records the occupational groups of fathers of the students. It can be seen from the Table 8.1 A that some categories have a large number of cases, while some do not. A simple code recorded at the first column of Table 8.1 A does not indicate the level of the occupational status of the fathers of the students. In order that meaningful results from the statistical analysis can be achieved, a decision is made to combine these categories into fewer groups. The combining of categories means reducing the number of possible values the scale can have.

Table 8.1A Classification of Father's Occupation and Mean Performance Scores

| Code | Occupational group | N | GPA Score | N | Bahasa <br> Indonesia <br> Score | N | English 2 <br> Score |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Farmer, Fisherman | 406 | 3.13 | 343 | 2.89 | 380 | 2.50 |
| 2 | Clerk (Government) | 1296 | 3.09 | 1108 | 2.88 | 1248 | 2.81 |
| 3 | Labourer | 113 | 3.04 | 86 | 2.90 | 106 | 2.61 |
| 4 | Manager, Doctor, Professional | 140 | 3.10 | 117 | 2.75 | 126 | 2.43 |
| 5 | Armed Forces | 124 | 3.12 | 114 | 2.74 | 120 | 2.60 |
| 6 | Non- Government Clerk | 1204 | 3.11 | 1054 | 2.84 | 1151 | 2.85 |
| 7 | Retired Government Clerk | 226 | 3.12 | 198 | 2.82 | 217 | 2.80 |
| 8 | Retired Non-Government Clerk | 176 | 3.12 | 141 | 2.89 | 165 | 2.60 |
| 9 | Self-Employed | 620 | 3.14 | 572 | 2.83 | 590 | 2.80 |
| 10 | Government Teacher | 612 | 3.13 | 538 | 2.93 | 590 | 2.72 |
| 11 | Non-Government Teacher | 97 | 3.13 | 85 | 2.86 | 94 | 2.87 |
| 12 | Others | 229 | 3.12 | 192 | 2.87 | 208 | 2.75 |
| 13 | Missing | 354 | 3.13 | 336 | 3.05 | 340 | 2.76 |
|  | Total | 5597 |  | 4884 |  | 5335 |  |

From this information, and after considerable exploratory examination of the available data, as well as an examination of Mohandas' (2002) report, the occupational groups are combined into six categories as are recorded in Table 8.2A.

The several categories of Clerk are seen to be combined with the Armed Forces, while the category of Other and Missing are also combined with this modal category rather than forming a separate group. However, there are further missing data in the records among the students who are recorded as having Bahasa Indonesia and English scores, as is indicated in Table 8.2A.
Table 8.2A Final Occupational Groups and their GPA, Bahasa Indonesia, and English Scores

|  | Occupational Group | Original Groups | GPA |  | Bahasa Indonesia |  | English 2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | Final Group |  | N | Mean Score | N | Mean Score | N | Mean Score |
| 1 | Labourer | 3 | 113 | 3.04 | 86 | 2.96 | 106 | 2.61 |
| 2 | Farmer, Fisherman | 1 | 406 | 3.14 | 343 | 2.89 | 380 | 2.50 |
| 3 | Clerical | 2,5,6,7,8,12,13 | 3606 | 3.11 | 3143 | 2.88 | 3449 | 2.80 |
| 4 | Self-Employed | 9 | 620 | 3.14 | 572 | 2.83 | 590 | 2.80 |
| 5 | Teacher | 10, 11 | 709 | 3.12 | 623 | 2.92 | 684 | 2.74 |
| 6 | Managerial, Professional | 4 | 140 | 3.10 | 117 | 2.75 | 126 | 2.43 |
|  | Missing |  | - | - | 713 |  | 262 |  |
|  | Total |  | 5597 |  | 4884 |  | 5335 |  |
|  | Product Moment Correlation (r) |  | $\begin{aligned} & \hline 0.027 \\ & \text { (not } \\ & \text { sig.) } \\ & \hline \end{aligned}$ |  | $\begin{aligned} & \hline-0.008 \\ & \text { (not sig.) } \end{aligned}$ |  | $\begin{aligned} & 0.001 \\ & \text { (not sig.) } \end{aligned}$ |  |

The six groups that form the final occupational grouping, have clearly identified meanings, except for the large clerical group, to which the Other category, as well as the Missing data, are assigned. A simple code value, as a whole number, is assigned to each of the six groups, with a value that is consistent with the rank ordering of established occupational scales that classify occupations according to skill and skill type, level of education received, income, and socio-economic status. This code value is recorded in the initial column of Table 8.2A. However, this coding does not provide evidence of a relationship with student performance as is indicated by the product moment correlations recorded at the foot of Table 8.2 A in spite of the fact that the groups formed have consistent relationships with other national and international occupational scales (Keeves and Saha, 1997).
These product moment correlation coefficients can be tested for statistical significance with correlations $\mathrm{r}>0.062$ being significant at the 5 per cent level and $r>0.081$ being significant at the 1 per cent level with these very large samples (Snedecor and Cochran, 1967, p. 557). The evidence presented by the correlation coefficients indicates that student performance, either during the course or after completion of the university course is not strongly related to the occupations of the fathers of the students. Nevertheless, there are some small differences between the six occupational groups with respect to GPA and English scores, but not with respect
to the Bahasa Indonesia scores. Table 8.3A records the results of Analyses of Variance that examine the statistical significance of the scores for the three outcomes under consideration, together with the associated intraclass correlations.

Table 8.3A Analyses of Variance for Differences between the Six Occupational Groups

| Outcome |  | Sum of <br> Squares | c df | Mean <br> square | F | Intraclass <br> Correlation ${ }^{15}$ | Sig. |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: | :---: |
| GPA | Between Groups | 1.59 | 5 | 0.32 | 4.18 | 0.003 | 0.00 |
|  | Within Groups | 424.54 | 5591 | 0.08 | $\mathrm{~m}=932.7$ |  |  |
|  | Total | 426.12 | 5596 |  |  |  |  |
| Bahasa | Between Groups | 4.24 | 5 | 0.85 | 1.41 | 0.0005 | 0.22 |
|  | Within Groups | 2934.08 | 4878 | 0.60 | $\mathrm{~m}=813.8$ |  | (not sig.) |
|  | Total | 2938.31 | 4883 |  |  |  |  |
| $\underline{\text { English 2 }}$ | Between Groups | 46.77 | 5 | 9.35 | 17.22 | 0.018 | 0.00 |
|  | Within Groups | 2894.45 | 5329 | 0.54 | $\mathrm{~m}=889$ |  | (sig.) |
|  | Total | 2941.22 | 5334 |  |  |  |  |

$\mathrm{m}=$ mean number of students in the 6 occupational groups

It can be seen that there are statistically significant differences between the six occupational groups for the GPA and English 2 scores, but not for the Bahasa Indonesia scores. These differences are indicated by the sizes of the intra-class correlation coefficients (rho). The intraclass correlation compares the between group variance with the total variance between and within groups, indicating that there are very small differences in the Bahasa Indonesia scores for the occupational groups and slightly larger differences between groups for the GPA and English 2 scores.

The magnitudes of the between group differences, indicated by the intra-class correlations are very small. Under these circumstances it is necessary to examine the differences in the mean scores for each of the six groups for the GPA, Bahasa Indonesia, and English 2 scores.
The intraclass correlation is equivalent to the average of all the correlations of all the possible pairs of variables in the data set. It is calculated from the F value obtained from an Analysis of Variance, and takes into account the differences between the means of the groups. Rho ( $\rho$ ) provides a more accurate estimate of the difference between groups than the other coefficients such as the correlation ratio or omega squared, (see Keeves (1997, pp. 589-591)) ${ }^{2}$.

$$
\rho(\text { rho })=\frac{F-1}{F+(m-1)}
$$

(Equation 1)
$\rho$ (rho) $=$ intraclass correlation coefficient Where $m$ is the average number of individuals in each group.

[^12]Calculation associated with the Six Occupational Groups with GPA as the criterion variable.

$$
\begin{aligned}
\mathrm{F}=4.18 \quad \mathrm{~m} & =\frac{5596}{6}=932.7 \\
(\rho) & =\frac{4.18-1}{4.18+(932.7-1)}=\frac{3.18}{4.18+931.7}=\frac{3.18}{935.9} \\
& =0.0034
\end{aligned}
$$

This value is not large and there are not large differences between groups even though the F value is highly significant. The F value can be tested for statistical significance with values $\mathrm{F}>2.41$ being significant at the 5 per cent level with 6 degrees of freedom and $\mathrm{F}>3.09$ being significant at the 1 per cent level (Snedecor and Cochran, 1969, p. 567).

Figures 8.1A (a), (b), and (c) show the differences in the scores between the six occupational groups for the GPA, Bahasa Indonesia, and English scores respectively. For the GPA scores the Labourer groups of students perform at a noticeably lower level than the other five occupational groups. Interestingly, the Self-Employed group of students, the Farmer, Fisherman group of students, the Clerical group of students and the Teachers group of students outperform the Managerial, Professional group of students. The graph shows that the Self-Employed group of students achieve at the highest level of GPA scores. There are significant differences in the mean scores between the other five occupational groups of students and the Labourer group of students as is indicated by the graph that the Labourer groups of students have the lowest level of performance on the completion of the course.

For the Bahasa Indonesia scores the students whose fathers are in the Managerial and Professional group have a lower level of achievement than the other groups, although the Self-Employed group also performs at a slightly lower level than the other four groups. The students whose fathers are Teachers have the best performance in Bahasa Indonesia, while the Managerial and Professional group of students have the lowest performance in Bahasa Indonesia. The differences in the mean scores between students whose fathers are Teachers and students in Managerial and Professional groups are significant. Interestingly, the Labourer group of students perform better in Bahasa Indonesia than students in the Farmer and Fisherman group, the Clerical group, the Self-Employed group and students in the Managerial and Professional group. It can be seen from the graph that there are significant
differences in the mean scores between the Labourer group of students and the Managerial and Professional group of students.
For the English 2 test scores, it is of interest to find that the students in the Managerial and Professional group have the lowest performance, even when compared to the students in the Labourer and the Farmer groups. Generally, students whose fathers are Clerical and Self-Employed have the best language skills than students in the other five occupational groups. Moreover, the students in the Teacher group have better performance than students in the Labourer, the Farmer, and the Managerial and Professional Groups. The graph indicates that students in the Farmer and the Labourer groups perform better than the Managerial and Professional group of students, although students in these two groups also have a lower performance when compared to the other occupational groups.

Nevertheless, the product moment and intraclass correlations indicate that there are only very small relationships between the values recorded on the occupation scale variable and the performance of the students of the six occupational groups when related to the initial levels of achievement on either the English 2 or the Bahasa Indonesia tests during the university course, as well as their Grade Point Averages on the completion of the course.


Figure 8.1A Graphs of Performance by Father's Occupation for GPA, Bahasa Indonesia, and English Scores
Category code 1; Labourer, 2; Farmer, Fisherman, 3; Clerical, 4; Self-Employed, 5; Teachers, 6; Managerial, Professional

[^13]
## Mother's Occupation

The second measure of socio-economic status is Mother's Occupation. The variable Mother's Occupation used in this study is similar in structure to the variable Father's Occupation discussed in the previous section. The policy decision makers in the University also group Mother's Occupation into 12 categories that are listed in Table 8.4A.

The study conducted by Mohandas (2002) was also examined as a reference to scale Mother's occupational data.
Table 8.4A Classification of Mother's Occupation and Mean Performance Scores

| Code | Occupational group | N | GPA <br> Score | N | Bahasa Indonesia <br> Score | N | English 2 <br> Score |
| ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | Farmer, Fisherman | 252 | 3.12 | 208 | 2.88 | 239 | 2.52 |
| 2 | Clerk (Government) | 565 | 3.12 | 487 | 2.86 | 545 | 2.83 |
| 3 | Labourer | 24 | 3.02 | 18 | 2.75 | 22 | 2.43 |
| 4 | Manager, Doctor, | 84 | 3.14 | 69 | 2.87 | 76 | 2.49 |
| 5 | Professional | Armed Forces | 8 | 3.12 | 8 | 2.63 | 7 |
| 6 | Non- Government Clerk | 275 | 3.09 | 237 | 2.84 | 2.57 |  |
| 7 | Retired Government Clerk | 29 | 3.10 | 27 | 2.89 | 278 | 2.89 |
| 8 | Retired Non-Government | 509 | 3.07 | 368 | 3.00 | 481 | 2.56 |
| 9 | Clerk | Self-Employed | 383 | 3.16 | 358 | 2.89 | 364 |
| 10 | Government Teacher | 867 | 3.13 | 780 | 2.89 | 2.74 |  |
| 11 | Non-Government Teacher | 129 | 3.13 | 116 | 2.82 | 2.73 |  |
| 12 | Other | 2145 | 3.11 | 1897 | 2.82 | 2048 | 2.82 |
| 13 | Missing | 327 | 3.12 | 311 | 3.08 | 314 | 2.75 |
|  | Total | 5597 | 3.11 | 4884 | 2.88 | 5335 | 2.76 |

Table 8.4A shows that Other categories has the largest number of cases. This is probably because students did not know what their mother was doing, or they did not want to say, 'disappeared', 'retired' or perhaps, their mother was a 'housewife'. After conducting an exploratory examination of the available data, as well as an examination of Mohandas' (2002) report, it is considered meaningful to combine the 13 categories into six categories as are recorded in Table 8.5A. This decision is made in order to achieve the meaningful results from the statistical analyses. It can be seen from Table 8.5A that the combination of 13 categories into six categories reduces the number of the categories into fewer groups.

Table 8.5A Final Occupational Groups and their GPA, Bahasa Indonesia, and English 2 Scores

|  | Occupational Group | Original Group | GPA |  | Bahasa Indonesia |  | English 2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | Final Group |  | N | Mean Score | N | Mean Score | N | Mean Score |
| 1 | Labourer | 3 | 24 | 3.02 | 18 | 2.75 | 22 | 2.43 |
| 2 | Farmer, Fisherman | 1 | 252 | 3.12 | 208 | 2.88 | 239 | 2.51 |
| 3 | Clerical | 2,5,6,7,8,12,13 | 3858 | 3.11 | 3335 | 2.87 | 3680 | 2.79 |
| 4 | Self-Employed | 9 | 383 | 3.16 | 358 | 2.89 | 364 | 2.74 |
| 5 | Teachers | 10, 11 | 996 | 3.13 | 896 | 2.88 | 954 | 2.74 |
| 6 | Managerial, <br> Professional <br> Missing | 4 | 84 | 3.14 | 69 <br> 713 | 2.87 | $\begin{aligned} & 76 \\ & 262 \end{aligned}$ | 2.49 |
|  | Total |  | 5597 |  | 4884 |  | 5335 |  |
|  | Product Moment Correlation (r) |  | 0.034 | $\begin{aligned} & \text { (not } \\ & \text { sig.) } \\ & \hline \end{aligned}$ | 0.006 | $\begin{gathered} \text { (not } \\ \text { sig.) } \\ \hline \end{gathered}$ | -0.008 | $\begin{aligned} & \text { (not } \\ & \text { sig.) } \end{aligned}$ |

The six groups that form the final occupational grouping, have clearly identified meanings, except for the large Clerical group, to which the Other category, as well as the Missing data, have been assigned. A simple code value, as a whole number, is assigned to each of the six groups, with a value that is consistent with the rank ordering of established occupational scales, that classify occupations according to skill and skill type, level of education received, income, and socio-economic status. This code value is recorded in the initial column of Table 8.5A. However, this coding does not provide evidence of a relationship with student performance as is indicated by the product moment correlations recorded at the foot of Table 8.5A.

The evidence presented from the analyses of variance indicates that student performance, either during the course or after completion of the university course is not strongly related to the occupations of the mothers of the students. Nevertheless, there are some small but statistically significant differences between the six occupational groups with respect to GPA and the English scores but not with respect to the Bahasa Indonesia. Table 8.6A records the results of analyses of variance that examine the statistical significance of the scores for the three outcomes under consideration, together with the associated intra-class correlations ( $\rho$ ).

Table 8.6A indicates that although there are not statistically significant differences between the six occupational groups for the Bahasa Indonesia scores, there is a statistically significant difference for the GPA and English 2 scores. The estimates of the intraclass correlations indicate that there are only very small differences in the

Bahasa Indonesia scores within the six occupational groups and slightly larger differences between groups for the GPA and English 2 scores.

Table 8.6A Analyses of Variance for Differences between the Six Occupational Groups

| Outcome |  | Sum of <br> Squares | df | Mean <br> Square | F | Intraclass <br> Correlation | Sig. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GPA | Between Groups | 1.328 | 5 | 0.266 | 3.496 | rho $=0.003$ | 0.004 |
|  | Within Groups | 424.795 | 5591 | 0.076 | $\mathrm{m}=932.67$ |  | (sig.) |
|  | Total | 426.123 | 5596 |  |  |  |  |
| BAHASA <br> INDONESIA | Between Groups | 0.481 | 5 | 0.096 | 0.160 | rho $=-0.0001$ | 0.977 |
|  | Within Groups | 2937.831 | 4878 | 0.602 | $\mathrm{m}=813.83$ |  | (not sig.) |
|  | Total | 2938.312 | 4883 |  |  |  |  |
| ENGLISH 2 | Between Groups | 25.43 | 5 | 5.086 | 9.296 | rho $=0.009$ | 0.000 |
|  | Within Groups | 2915.785 | 5329 | 0.547 | $\mathrm{m}=889$ |  | (sig.) |
|  | Total | 2941.218 | 5334 |  |  |  |  |

Critical value Foo at 5\% level= 2.21 (Pedhazur, 1982, p. 791)
Figures 8.2 A (a), (b), and (c) show the differences in the scores between the six occupational groups for the GPA, Bahasa Indonesia, and English scores respectively. For the GPA scores the Labourer group of students perform at a noticeably lower level than the other five occupational groups. It can be seen from the graph that the Labourer group of students have the worst performance on the completion of the course, while students whose mothers are in the Self-Employed group have the best performance. The mean scores of the Self-Employed group of students are slightly larger than the Managerial, Professional, and Teachers. Students in the Managerial and Professional group and Teachers group perform at a slightly higher level than the other two occupational groups, the Farmer and Fisherman group and the Clerical group.
For the Bahasa Indonesia scores the students whose mothers are in the Labourer group also have a lower level of achievement than the other groups. Students in the Labourer group have the worst performance in Bahasa Indonesia, while the Selfemployed group of students have the best performance, but there are not significant differences in the mean scores between students in the Self-Employed group and students in the Labourer group.


Figure 8.2A Graphs of Performance by Mother's Occupation for GPA, Bahasa Indonesia, and English Scores
Category codes 1; Labourer, 2; Farmer, Fisherman, 3; Clerical, 4; Self-Employed, 5; Teachers, 6; Managerial, Professional

Although students whose mothers are Teachers do not have the best performance, this group of students outperform in Bahasa Indonesia students whose mothers are in the Managerial and Professional group. Moreover, there are no identifiable differences in the mean scores between students in the Clerical group and students whose mothers are in the Farmer and Fisherman group.

For the English 2 test scores, the students in the Labourer groups have the lowest performance compared to other five occupational groups, while students whose mothers are Clerical have the highest performance. Although students in the Managerial and Professional group have a higher level of performance than students in the Labourer group, the performance of students in the Clerical, Self-Employed, and Teachers groups are still higher than students in the Managerial and Professional group. Moreover, students in the Farmer and Fisherman group are slightly higher level than the Managerial and Professional group. Students in the Labourer group perform at the lowest level, while students in the Clerical group perform at the highest level. Nevertheless, the product moment and intra-class correlations indicate that there are only small relationships between the values recorded on the occupational scale variable and the performance of the students of the six occupational groups relating to the initial levels of achievement on either the English or the Bahasa tests as well as the Grade Point Averages on the completion of the course.

## Mode of Selection

Mode of Selection is another variable that contains categorical data, as do the two variables discussed above. The variable Student Selection employed in this study is different in nature from the variables Father's Occupation and Mother's Occupation discussed in the previous section. The policy decision makers in the University grouped Mode of Selection into eight categories that are listed in Table 8.7A. The Table indicates the scores of the groups with respect to how the University selects its students, but there is no way of ordering these categories; except by criterion scaling.

Table 8.7A Classification of Mode of Selection and Mean Performance Scores

| Code | Mode of Selection | N | GPA <br> Score | N | Bahasa <br> Indonesia Score | N | English 2 <br> Score |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | Despro | 2 | 2.00 | 1 | 2.50 | 0 | - |
| 2 | Kerjasama | 28 | 3.17 | 24 | 2.77 | 25 | 2.76 |
| 3 | National Selection | 4115 | 3.12 | 3478 | 2.89 | 3907 | 2.74 |
| 4 | Achievement | 10 | 3.50 | 10 | 3.35 | 10 | 3.35 |
| 5 | Invitation | 668 | 3.17 | 647 | 2.85 | 650 | 2.69 |
| 6 | Independent | 13 | 3.11 | 11 | 2.77 | 13 | 3.42 |
| 7 | Industrial Partnership | 691 | 3.00 | 646 | 2.78 | 665 | 2.90 |
| 8 | Scholarship | 70 | 3.30 | 67 | 3.13 | 65 | 2.76 |
|  | Total | 5597 | 3.11 | 4884 | 2.87 | 5335 | 2.76 |

Despro= Design Product Kerjasama= low scores and special entry

Table 8.7 A shows that students who go to the University under National Selection have the largest number of cases compared to the number of cases from other modes of selection. Some Modes of Selection such as Despro (Design Product), Kerjasama (Partnership), Achievement, Independent, and Scholarship have very small numbers of cases. After conducting an exploratory examination of the available data and in order to obtain a meaningful examination of the available data, it is considered of interest to combine these five Modes of Selection into one category with the name of 'Other'. Consequently there are four categories associated with the Mode of Selection as are recorded in Table 8.8A. Moreover, it is considered to be important to form groups and to calculate the mean for each group to identify which group has the highest GPA, the Bahasa Indonesia, and the English 2 scores.

Table 8.8A Final Mode of Selection Groups and their GPA, Bahasa, and English Scores

|  | Mode of Selection | Original Group | GPA |  | Bahasa Indonesia |  | English 2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | Final Group |  | N | Mean Score | N | Mean Score | N | Mean Score |
| 1 | Industrial Partnership | 7 | 691 | 3.00 | 646 | 2.78 | 665 | 2.90 |
| 2 | National Selection | 3 | 4115 | 3.12 | 3478 | 2.89 | 3907 | 2.74 |
| 3 | Invitation | 5 | 668 | 3.17 | 647 | 2.85 | 650 | 2.69 |
| 4 | Other | 1,2,4,6,8 | 123 | 3.25 | 113 | 3.04 | 113 | 2.91 |
|  | Missing |  |  |  | 713 |  | 262 |  |
|  | Total |  | 5597 |  | 4884 |  | 5335 |  |
|  | Product Moment Correlation (r) |  | 0.170 (sig.) |  | 0.036 (not sig.) |  | -0.046 | $\begin{gathered} \text { (not } \\ \text { sig.) } \end{gathered}$ |

Table 8.8A indicates the final Mode of Selection groups after considerable exploratory examination of the available data. The four groups that form the final Modes of Selection grouping have clearly identified meanings. A simple code value, as a whole number, is assigned to each of the four groups, with a value that is consistent with the level of ordering, that indicates the larger the value that the
category has, the larger the mean value for that category. This value is recorded in the initial column of Table 8.8A. This coding provides evidence of a clearly significant relationship with student performance for GPA, but not for the Bahasa Indonesia and the English 2 scores, as is indicated by the product moment correlations recorded at the foot of Table 8.8A, although the relationships are small. The evidence presented indicates that student performance, either during the course or after completion of the university course is not strongly related to the Mode of Selection of the students. Table 8.9A records the results of analyses of variance that examine the statistical significance of the scores for the three outcomes under consideration, together with the associated intra-class correlations.

Table 8.9A Analyses of Variance for Differences between the Four Modes of Selection Groups


Table 8.9A shows that there are statistically significant differences between the four Mode of Selection groups for GPA, Bahasa Indonesia and English scores. The intraclass correlation compares the between group variance with the total variance between and within groups, indicating that there are smaller differences in the Bahasa Indonesia and English 2 scores for the selection groups but slightly larger differences between groups for the GPA.

Figures 8.3A (a), (b), and (c) present the differences in the scores between the four Mode of Selection groups for the GPA, Bahasa Indonesia, and English 2 scores respectively.

For the GPA scores, Group 4 of Mode with respect to Selection as indicated by Other (the results involving the combined group) perform at a noticeably higher level than the other three selection groups. Group 1 which is Mode of Selection based on Industrial Partnership, performs at the lowest level. Interestingly, students who are selected by National Selection are outperformed by students who are selected by Invitation and Other methods of selection. Students who are classified in Group 4 that is students who are selected based on the Other selection methods have the best performance on the completion of the course. This is interesting since the number of students who are categorised in this group is small.

Similarly, for the Bahasa Indonesia scores the students who are categorised in the Other groups achieve the highest score when compared to the other three Mode of Selection groups. There are significant differences in the mean scores between students in Group 4 and students in Group 1. Although students in Group 2 (National selection) are able to outperform students in Group 3 (Invitation selection) and Group 1 (Industrial Partnership), the differences in the mean scores between Group 4 (Other selection) and Group 2 (National selection) are sizeable.

For the English 2 test scores, it is interesting that the students in Group 1 have better performance than students in Group 2 and Group 3. Students in Group 4 (Other) consistently show their better performance by achieving the highest scores compared to the three other groups. The graphs in Figures 8.3A (a), (b), and (c) consistently show that those students who are classified in the Group 4 (Other) achieve at the highest level of performance. However, although the students in Group 1 have the lowest level of performance for the GPA and the Bahasa Indonesia, the same does not occur for the English 2 test scores. There are slight differences in the English performance between students in Group 1 and in Group 4. In addition, students in Group 1 outperform students in Group 2 and Group 3 in English 2 performance. Nevertheless, the product moment and intra-class correlations indicate that there are only moderate relationships between the values recorded for the Mode of Selection variable and the performance of the students of the four selection groups that relate to the Grade Point Averages on the completion of the course, but not to the Bahasa Indonesia test performance, as well as the initial levels of achievement on the English 2 tests.


Figure 8.3A Graphs of Performance by Mode of Selection for GPA, Bahasa Indonesia, and English Scores
Category codes 1; Industrial Partnership, 2; National Selection, 3; Invitation, 4; Other

## Faculty

Faculty is another variable in the dataset that is recorded as having categorical data. The policy decision makers in the University group Faculty into five categories that are listed in Table 8.10A. Thus the table indicates the types of faculty available in the University under survey.

Table 8.10A Classification of Faculty and Mean Performance Scores

| Code | Faculty | N | GPA <br> Score | N | Bahasa Indonesia <br> Score | N | English <br> Score |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Mathematics and Science | 931 | 3.07 | 891 | 2.79 | 887 | 2.51 |
| 2 | Industrial Engineering | 1901 | 3.14 | 1629 | 3.00 | 1827 | 2.84 |
| 3 | Informatics Engineering | 629 | 3.24 | 542 | 3.04 | 601 | 3.13 |
| 4 | Marine Engineering | 689 | 3.05 | 581 | 2.67 | 650 | 2.59 |
| 5 | Civil and Planning | 1447 | 3.09 | 1241 | 2.80 | 1370 | 2.73 |
|  | Engineering |  |  |  |  |  |  |
| Missing |  | - | - | 713 | 2.88 | 48 |  |
| Total | 5597 | 5597 | 4884 | 4884 | 5549 | 2.76 |  |

Table 8.10A shows that the University has five faculties. From this information, and after considerable exploratory examination of the available data, it is considered meaningful to reorder the groups and calculate the mean for each group. The purpose for undertaking this kind of examination is to identify which faculty has the highest GPA, the Bahasa Indonesia, and the English 2 scores. This step is considered to be important since this determines how a code value is assigned to each of the five faculties. Table 8.11A shows the final code value that is assigned to each of the faculties recorded by the University after employing criterion scaling.

Table 8.11A Final Faculty Groups and their GPA, Bahasa Indonesia, and English Scores

|  | Faculty Group | Original <br> Group | GPA |  | Bahasa |  | Indonesia |  |
| :--- | :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| English 2 |  |  |  |  |  |  |  |  |
| Code | Final Group |  | N | Mean <br> Score | N | Mean <br> Score | N | Mean <br> Score |
| 1 | Marine Engineering | 4 | 689 | 3.05 | 581 | 2.67 | 650 | 2.58 |
| 2 | Mathematics and Science | 1 | 931 | 3.07 | 891 | 2.79 | 887 | 2.51 |
| 3 | Civil and Planning Engineering | 5 | 1447 | 3.09 | 1241 | 2.80 | 1370 | 2.72 |
| 4 | Industrial Engineering | 2 | 1901 | 3.14 | 1629 | 3.00 | 1827 | 2.84 |
| 5 | Informatics Engineering | 3 | 629 | 3.24 | 542 | 3.04 | 601 | 3.13 |
|  | Missing | - | - | 713 |  | 262 |  |  |
|  | Total |  | 5597 | 4884 |  | 5335 |  |  |
|  | Product Moment Correlation (r) |  | 0.174 | (sig.) | 0.154 | (sig.) | 0.220 | (sig.) |

The five faculties that form the faculty groups have clearly identified meanings. The code value that is recorded in the initial column of Table 8.11A indicates which group has the highest score for GPA, the Bahasa Indonesia, and the English 2 scores. The order number assigned to the groups shows that the lowest code value indicates the faculty that has the lowest scores on the GPA, Bahasa Indonesia, and English. In
general, the larger the code value the faculty has, the higher the scores for the faculty. From the product moment correlations (r) recorded in Table 8.11A, evidence is provided for a relationship between faculty and student performance. The evidence presented indicates that student performance, either during the course or after completion of the university course is moderately related to the faculty of the students. Moreover, there are statistically significance differences between the five faculty groups with respect to GPA, the Bahasa Indonesia, and the English 2 scores. Table 8.12 A records the results of analyses of variance that examine the statistical significance of the scores for the three outcomes under consideration, together with the associated intraclass correlations.
Table 8.12A Analyses of Variance for Differences between the Five Faculty Groups

| Outcome |  | Sum of Squares | df | Mean <br> Square | F | Intra-Class <br> Correlation | Sig. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GPA | Between Groups | $15.348$ | $14$ | $3.837$ | $\begin{array}{\|l} 52.234 \\ \mathrm{~m}=1119 \end{array}$ | rho $=0.04$ | $\begin{aligned} & 0.000 \\ & \text { (sig.) } \end{aligned}$ |
|  | Within Groups <br> Total | $\begin{aligned} & 410.775 \\ & 426.123 \end{aligned}$ | $\begin{aligned} & 5592 \\ & 5596 \end{aligned}$ | . 073 |  |  |  |
| BAHASA <br> INDONESIA | Between Groups | $77.602$ | $4$ | $19.400$ | $\begin{aligned} & 33.088 \\ & \mathrm{~m}=977 \end{aligned}$ | rho $=0.03$ | $\begin{aligned} & 0.000 \\ & \text { (sig.) } \end{aligned}$ |
|  | Within Groups <br> Total | $\begin{array}{\|l\|} 2860.710 \\ 2938.312 \end{array}$ | $\begin{aligned} & 4879 \\ & 4883 \end{aligned}$ | . 586 |  |  |  |
| ENGLISH 2 | Between Groups | $169.052$ | 4 | 42.263 | $\begin{array}{\|l\|l} 81.258 \\ \mathrm{~m}=1067 \end{array}$ | rho $=0.073$ | $\begin{aligned} & 0.000 \\ & \text { (sig.) } \end{aligned}$ |
|  | Within Groups <br> Total | $\begin{aligned} & 2772.166 \\ & 2941.218 \end{aligned}$ | $\begin{aligned} & 5330 \\ & 5334 \end{aligned}$ | . 520 |  |  |  |

Table 8.12 A shows that there are highly statistically significant differences between the five faculty groups for GPA, and the Bahasa Indonesia, and English 2 scores. This is indicated by p values that are greater than $0.01(>0.01)$ and shows that there are relatively small differences between groups for the GPA and Bahasa Indonesia scores as well as the English 2 scores for the faculty groups.

Figures 8.4A (a), (b), and (c) depict the differences in the scores between the five faculty groups for the GPA, Bahasa, and English 2 scores respectively. For the GPA scores, Group 5, that is students who are from the Informatics Engineering achieve at a noticeably higher level than the other faculty groups. Group 1 which is students in the Marine Engineering faculty performs at the lowest level. The graphs show that
the differences in the mean scores between students who are from the Informatics Engineering faculty and students who are from the Marine Engineering faculty are clearly significant.

Similarly, for the Bahasa Indonesia scores, students who are from Informatics Engineering faculty do better than the other four faculty groups. It can be seen from the graphs that students in the Informatics Engineering group perform at the highest level, while students in the Marine Engineering group have the lowest performance, except in English 2, for which the Civil and Planning Engineering group has the lowest performance.

For the English 2 scores, students from the Informatics Engineering faculty are consistently placed at a noticeably higher level than the other faculty groups. Students who are from the Group 1 (Marine Engineering) always have the lowest performance for the GPA and the Bahasa Indonesia scores, but not for the English 2 test scores. Students from the Marine Engineering Faculty outperform students from the Mathematics and Science Faculty in English achievement.
Even though students in each faculty have different GPA results, generally they are similar to their language skills with respect to both Bahasa Indonesia and English 2 achievement.

The graphs in Figures 8.4A (a), and (b) also consistently record those students who are classified in the Group 1 (Marine Engineering) achieve at the lowest level of performance for the GPA and the Bahasa Indonesia scores. Moreover, the graphs also consistently record a pattern of performance in order, starting with Group 5 (Informatics System Engineering) as the highest level group followed by Group 4 (Industrial Engineering), ), Group 3 (Civil and Planning Engineering), Group 2 (Mathematics and Science, and Group 1 (Marine Engineering) respectively for GPA and the Bahasa Indonesia scores. However, for the English 2 score in Figure 8.4A (c) the pattern shows Group 5 at the highest level followed by Group 4, Group 3, Group 1, and finally Group 2. It is surprising that students in Group 1 (Marine Engineering) outperform students in Group 2 (Mathematics and Science) in English achievement.


Figure 8.4A Graphs of Performance by Faculty for GPA, Bahasa Indonesia, and English Scores Category codes 1; Marine Engineering, 2; Mathematics and Science, 3; Civil and Planning Engineering, 4; Industrial Engineering, 5; Informatics Engineering

Nevertheless, the product moment and intra-class correlations indicate that there are only moderate relationships between the values recorded for the Faculty variable, thus the performance of the students in the five faculty groups relate in general to the initial levels of achievement on the English 2 tests, and on the Bahasa Indonesia test, as well as their Grade Point Averages on the completion of the course.

## Rank-Scaled Scoring

## Parent's Salary

Parent's Salary is the third measure of socio-economic status of the student used in this study. The information obtained from the University data files was classified by the policy decision makers into eight categories. Parents' Salary is recorded in the form of rank-scaled scores (interval form). For example, the rank of salary is between 0.25-0.50. Originally, the categories of Parent's Salary are recorded in millions. However, a decision is made in this study to record the rank of salary with two decimal points. Therefore, the rank of salary $0.25-0.50$ can be read as between two hundred and fifty thousand and five hundred thousand rupiahs.
Since the University recorded data for Parent's Salary in the form of numeric strings, the information has to be converted into number form by recoding each of the rank scale scores into code values from 1 to 8 to represent the ranked income. These code values suggest that there are eight categories for the variable. However, these code values do not represent the level of student achievement, they just represent categories. Table 8.13A describes the classification of Parent's Salary and Mean Performance Scores.

Table 8.13A Classification of Parents' Salary and Mean Performance Scores

| Code | Income Group ${ }^{17}$ | N | GPA Score | N | Bahasa Indonesia Score | N | English 2 Score |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | < 0.25 | 127 | 3.12 | 112 | 2.87 | 121 | 2.36 |
| 2 | 0.25-0.50 | 406 | 3.14 | 343 | 2.97 | 372 | 2.57 |
| 3 | 0.50-1.00 | 1085 | 3.12 | 937 | 2.88 | 1020 | 2.62 |
| 4 | 1.00-2.50 | 2486 | 3.12 | 2168 | 2.86 | 2386 | 2.76 |
| 5 | 2.50-5.00 | 937 | 3.11 | 832 | 2.88 | 900 | 2.93 |
| 6 | 5.00-7.50 | 221 | 3.09 | 200 | 2.81 | 215 | 2.93 |
| 7 | 7.50-10.00 | 117 | 3.04 | 100 | 2.75 | 107 | 3.00 |
| 8 | $>10.00$ | 66 | 3.12 | 56 | 2.79 | 66 | 3.17 |
|  | Missing | 152 |  | 849 |  | 410 |  |
|  | Total | 5445 |  | 4748 |  | 5187 |  |

[^14]From this information, and after considerable exploratory examination of the available data, the eight income groups are combined into six categories as are recorded in Table 8.14 A . Thus, Group 1, that is the group with a salary in the category $<0.25$ (less than $\mathrm{Rp}^{18} 250.000$ ), is seen to be combined with Group 2 that is the group with salary in the category of $0.25-0.5(\operatorname{Rp} 250.000-500.000)$, while Group 7 that is the group with a salary in the category 7.5-10.0 ( $\mathrm{Rp} 7.500 .000-10.000 .000$ ), is seen to be combined with Group 8 that is the group with a salary $>10$ (more than Rp 10.000.000). However, there are further missing data in the records for the students who are recorded as having the GPA, Bahasa, and English scores.

Table 8.14A Final Salary Groups and their GPA, Bahasa Indonesia, and English Scores

|  | Salary Group | Original Group | GPA |  | Bahasa Indonesia |  | English 2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | Final Group |  | N | Mean Score | N | Mean Score | N | Mean Score |
| 1 | <0.25 and 0.25-0.50 | 1,2 | 533 | 3.14 | 455 | 2.94 | 493 | 2.52 |
| 2 | 0.50-1.00 | 3 | 1085 | 3.12 | 937 | 2.88 | 1020 | 2.62 |
| 3 | 1.00-2.50 | 4 | 2486 | 3.12 | 2168 | 2.86 | 2386 | 2.76 |
| 4 | 2.50-5.00 | 5 | 937 | 3.11 | 832 | 2.88 | 900 | 2.93 |
| 5 | 5.00-7.50 | 6 | 221 | 3.09 | 200 | 2.81 | 215 | 2.93 |
| 6 | 7.50-10.0 and >10.0 | 7,8 | 183 | 3.07 | 156 | 2.76 | 173 | 3.07 |
|  | Missing |  | 152 |  | 849 |  | 410 |  |
|  | Total |  | 5445 |  | 4748 |  | 5187 |  |
|  | Product Moment Correlation (r) |  | -0.040 | $\begin{aligned} & \text { (not } \\ & \text { sig.) } \end{aligned}$ | -0.033 | (not sig.) | 0.183 | (sig.) |

The six groups that form the final occupational grouping have clearly identified meanings. A simple code value as a whole number is assigned to each of the six groups, with a value that is consistent with the level of ordering, which indicates the larger the value, the larger the salary of the parents. This code value is recorded in the initial column of Table 8.14A. Moreover, this coding does not provide evidence of a relationship with student performance as is indicated by the product moment correlations recorded at the foot of Table 8.14A. However, the negative sign does indicate that the financially poorer students are doing slightly better than the students whose parents have a higher income. The evidence presented indicates that student performance, either during the course or after completion of the university course is not strongly related to the parental salary of the students. Table 8.15A records the results of analyses of variance that examine the statistical significance of the differences between scores for the three outcomes under consideration, together with the associated intra-class correlations.

[^15]Table 8.15A Analyses of Variance for Differences between the Six Income Groups

| Outcome | Sum of <br> Squares | df | Mean <br> Square | F | Intraclass <br> Correlation | Sig. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Critical value $\mathrm{F} \infty$ at $5 \%$ level $=2.21$ (Pedhazur, 1982, p.791)

The estimated intraclass correlations indicate that there are very small differences between groups for the GPA and Bahasa Indonesia scores. However, there are slightly larger differences in the English 2 scores for the income groups. Figures 8.5A (a), (b), and (c) record the differences in the scores between the six income groups for the GPA, Bahasa Indonesia, and English scores respectively.

For the GPA scores Group 1 (the $<0.25$ and $0.25-0.50$ group) performs at a noticeably but not significantly higher level than the other five income groups. Interestingly, students who are classified in Group 6 (the 7.5-10.00 and $>10.00$ group) have the lowest performance. There is a continuous decrease in the level of achievement students obtained in the GPA scores. The graph also shows that the higher the parent's salary identified, the lower the GPA scores obtained. This is also indicated by an apparently noticeable decrease in the mean scores for students whose parents have the highest salary. However, these differences are not statistically significant.

The Bahasa Indonesia scores for the students whose parent's salary are in Group 1 (the 0.25-0.50 group) also have the highest level of achievement, while students who are classified in Group 6 have the lowest level of achievement. The students in Group 4 (the 2.50-5.0 group) perform at a slightly higher level than the students in Group 5 (the 5.0-7.50 group) and in Group 6 (the 7.5-10.0 and $>10.0$ group). The graph provides evidence that the poorer students perform better than the richer students. The graph also indicates that the larger the identified parent's salary, the
lower the level of achievement that the students obtained on the Bahasa Indonesia scores.

For the English 2 test scores, the students in Group 1 (the $<0.25$ and $0.25-0.50$ group) have the lowest performance, while the students in Group 6 achieve the highest scores in English. The graph provides evidence that the richer students perform better than the poorer students. Moreover, the graph indicates that the larger the parents' salary identified, the higher the level of achievement that the students obtained in English.

Nevertheless the product moment correlations indicate that there are no relationships between the values recorded for the parent's salary variable and the performance of the students in the six occupational groups relating to the initial levels of achievement on the Bahasa Indonesia test as well as their Grade Point Averages on the completion of the course. However, there are moderate relationships between the English 2 test and the parent's salary.


Figure 8.5A Graphs of Performance by Parents' Salary for GPA, Bahasa Indonesia, and English 2 Scores
Category codes $1 ;<0.25$ (less than two hundred and fifty thousand rupiahs) and $0.25-0.5$ (between two hundred and fifty thousand and five hundred thousand rupiahs), 2; 0.5-1.0 (between five hundred thousand and one million rupiahs), 3; 1.0-2.5 (between one million and two million and five hundred thousand rupiahs), 4; 2.5-5.0 (between two million and five hundred thousand and five million rupiahs), 5; 5.0-7.5 (between five million and seven million and five hundred thousand rupiahs, 6; 7.5-10.0 (between seven million and five hundred thousand and ten million rupiahs) and $>10.0$ (greater than ten million rupiahs).

## Semester

Semester indicates the stage in time of their course at which students take a course in English 2 or Bahasa Indonesia at the University. Different students took Bahasa Indonesia or English 2 as a subject at the University in different semesters. This section is divided into two parts, (a) Semester for English 2, and (b) Semester for Bahasa Indonesia. This is because both the Bahasa Indonesia and English 2 tests were undertaken in different semesters. Thus, in the datasets there are two semester variables, (a) semester for English 2 and (b) semester for Bahasa Indonesia. Therefore, semester for English 2 does not have the same meaning as semester for Bahasa Indonesia. The university recorded them differently. Since both semester for English 2 and Bahasa Indonesia are recorded separately, they are analysed and reported separately. The following section records the results of the rank-scaled scoring for Semester for English and Semester for Bahasa Indonesia. However, it is important to note that English which is discussed in this section is English 2 and not English 1, since English 1 must be undertaken in the first semester.

## Semester for English 2

The information obtained from the University files recorded semester in 16 categories. The number 2-16 listed in Table 8.16A indicates the semester in which students enrolled for English. The University recorded two types of scores for English, score for English 1 and score for English 2. This section presents the relationship between Semester and score for English 2. Table 8.16A records the raw score values for English 2. The categories of semester for English 2 do not begin with number 1 or Semester 1 (in the column Semester Group) except for seven students, because these students enrolled in English 2 in Semester 2 (when they were in the second semester) and after their completion of English 1 in Semester 1. It means that as they finished English 1 in Semester 1, they enrolled English 2 directly.

Table 8.16A shows the differences in the number of students who took English in the different semesters. This indicates that students had opportunities to enrol in English 2 during their candidature as long as they had completed English 1. There are only seven students who enrolled in English 2 immediately after they completed English 1. There are a large numbers of students who took English 2 in Semesters 7 and 8. However, there are very few students who took English in certain semesters. Consequently, it is necessary to collapse some small numbers of cases in certain
categories into one category and a decision is made to combine these semester categories into years.

Table 8.16A Classification of Semester and Mean Performance Scores.

| Code | Semester Group | N | English Score |
| :---: | :---: | :---: | :---: |
| 1 | 2 | 7 | 3.36 |
| 2 | 3 | 50 | 2.83 |
| 3 | 4 | 162 | 2.98 |
| 4 | 5 | 452 | 2.74 |
| 5 | 6 | 960 | 2.82 |
| 6 | 7 | 1470 | 2.79 |
| 7 | 8 | 1495 | 2.72 |
| 8 | 9 | 338 | 2.67 |
| 9 | 10 | 246 | 2.61 |
| 10 | 11 | 49 | 2.67 |
| 11 | 12 | 51 | 2.36 |
| 12 | 13 | 22 | 2.68 |
| 13 | 14 | 24 | 2.60 |
| 14 | 15 | 3 | 2.00 |
| 15 | 16 | 6 | 2.42 |
|  | Missing | 262 |  |
|  | Total | 5335 |  |

From the information obtained from Table 8.16A, and after considerable exploratory examination of the available data, the semester groups are combined into year groups and thus form five categories as are recorded in Table 8.17A. This involves several steps to recode them into Year. First, the several categories of Semester are seen to be combined with another category. Then, the combination of semester categories is recoded into Year. For example the combination of Semester 2, 3, and 4 are recoded as $1^{\text {st }}$ Year for Semesters 2 and $2^{\text {nd }}$ Year for Semesters 3 and 4, while Semesters 5 and 6 are recoded as $3^{\text {rd }}$ Year. Semesters 7 and 8 are recoded as $4^{\text {th }}$ Year, while Semesters 9 and 10 are recoded as $5^{\text {th }}$ Year. Semesters 11 to 17 are recoded as $>5^{\text {th }}$ Year (more than $5^{\text {th }}$ Year). After recoding semester categories into years, it is necessary to put year categories into groups as Group 1, Group 2, Group 3, Group 4 and Group 5 as seen in the third column of Table 8.17A. This grouping corresponds to the code values assigned. However, there are further missing data in the records among the students who were not recorded as having English scores.

Table 8.17A Final Semester Groups and their English Scores

| Code | Semester Group | Final Group | English |  |
| :--- | :--- | :---: | :--- | :--- |
|  | Final Group into Year |  | N | Mean Score |
| 1 | Year 1 and 2 (semester 2, 3, 4) | 1 | 219 | 2.96 |
| 2 | Year 3 (semester 5, 6) | 2 | 1412 | 2.80 |
| 3 | Year 4 (semester 7, 8) | 3 | 2965 | 2.76 |
| 4 | Year 5 (semester 9, 10) | 4 | 584 | 2.65 |
| 5 | More than Year 5 (semester 11-17) | 5 | 155 | 2.54 |
|  | Missing |  | 262 |  |
| Total |  |  | 5335 |  |
| Product Moment Correlation (r) |  | -0.09 | (not sig.) |  |

The five groups that form the final semester grouping have clearly identified meanings. A simple code value, as a whole number, is assigned to each of the five groups. This code value is recorded in the initial column of Table 8.17A. This code value that has the same order as the original group identifies the natural order of Semester available in the University and does not indicate the order of the strongest performing group obtained from a one-way analysis of variance. However, this code value does correspond to the larger the mean scores that the students obtained, the smaller the code values assigned. Nevertheless, this coding does not provide strong evidence of a relationship with student performance before completion of the university course, as is indicated by the product moment correlation of ( $\mathrm{r}=-0.09$ ) recorded at the foot of Table 8.17 A . The evidence presented indicates that student performance before completion of the university course is only weakly related to the year (semester) in which students took a course. However, the mean scores recorded in Table 8.17A do provide evidence that the better students study English as soon as the students can or want to. It can be seen from Table 8.17A that students who took a course in the first and second year (Group 1) have the best performance. Students who enrolled in English in the last year (Group 5) have the worst performance. Thus the results of the one-way analysis of variance record the mean scores in order. Group 1 is followed by Group 2, Group 3, Group 4, and Group 5 respectively. The mean score students obtained correspond inversely with the order of semester provided by the university. The earlier students took a course, the better the results obtained.

Moreover, there are some small but statistically significant differences between the five year groups with respect to the English 2 scores. Table 8.18A records the results of the analysis of variance that examines the relationships and statistical significance
of the scores for English language performance, together with the associated intraclass correlation.

Table 8.18A Analyses of Variance for Differences between the Year Groups

|  | Sum of <br> Squares | df | Mean <br> Square | F | Intraclass <br> Correlation | Sig. |
| :--- | :--- | :--- | :---: | :---: | :--- | :--- |
| Between Groups | 25.667 | 4 | 6.417 | 11.731 | rho $=0.01$ | 0.00 |
| Within Groups | 2915.551 | 5330 | 0.547 | $\mathrm{~m}=1067$ |  | (sig.) |
| Total | 2941.218 | 5334 |  |  |  |  |

$\mathrm{m}=$ mean number of students in the 5 year groups

It can be seen that there are statistically significant differences between the five year groups for the English 2 scores. These differences are indicated by the size of the intraclass correlation coefficient (rho= 0.01), that is, however, very small, but is statistically significant.

Figure 8.6A records the differences in the scores among the five year groups for the English 2 scores. It can be seen from the graph that Group 1, that is students who took English 2 in the first and second year achieve at a noticeably higher level that the other year groups. This group has the best performance. Group 2 which is students who took English 2 in the third year (Semesters 5 and 6) performs better than Group 3 (Semesters 7 and 8), Group 4 (Semesters 9 and 10) and Group 5 (more than the fifth year). Surprisingly, there are a large number of students who enrolled in English 2 in the fourth year (Group 3), but they performed worse than the students who took English 2 in the first, second (Group 1), and the third years (Group 2). The graph also shows that there is a continuous decrease in students' performance that is related to when they enrolled in English 2 in the later years. This indicates that students who took English 2 in the earlier years are found to do better than students who took English 2 in the later years. These results can be clearly seen from Figure 8.6A which shows that students who took English in the fifth year and after the fifth year have the lowest performance when compared with students who took English 2 in an earlier year.

ENGLISH 2


Figure 8.6A Graphs of Performance by Year (Semester) for English Score. Category codes 1; Year 1 and 2 (Semester 2, 3 and 4), 2; Year 3 (Semester 5 and 6) 3; Year 4 (Semester 7 and 8), 4; Year 5 (Semester 9 and 10), 5; More than Year 5 (Semester 11-17).

It can be seen from the graph that there are small differences in the mean scores between students who took English 2 at the first and second year and students who took English later than the fifth year. This is also indicated by the negative sign of the product moment correlation (r) that indicates that students do better when they take a course in an earlier year.

Nevertheless, the product moment and intra-class correlations indicate that there are only small relationships between the values recorded on the Semester (Year) variable and the performance of the students in the five year groups with respect to the initial levels of achievement on the English 2 tests.

## b. Semester for Bahasa Indonesia (Indonesian Language)

The information obtained from the University files are recorded by semester into 11 categories that relate to when the students took the Bahasa Indonesia test. The number 1-11 listed in Table 8.19A indicates the semester in which students enrolled in the Bahasa Indonesia course. Table 8.19A displays the raw values for the different semesters when students enrolled in the Bahasa Indonesia course. The numbers of students who took Bahasa Indonesia in certain semesters varies greatly. Large numbers of students took Bahasa Indonesia in Semesters 2 and 4. Semesters 2 and 4 are categorized as even semesters in Indonesia. The order of Semester Group
recorded in the first column of Table 8.19A indicates that the University offers Bahasa Indonesia in every semester (that is both odd and even semesters), and not just in certain semesters. This provides evidence that students can choose in which semester they want to enrol for Bahasa Indonesia, whether they enrolled in their first year or in later years near their completion of their course at the university. A simple code value that is recorded in column 1 (semester group) of Table 8.19A is a simple code that can be used to describe the group in order, not a code that is used to describe the level of group based on the students' mean performance scores.

Table 8.19A Classification of Semester and Mean Performance Scores

| Semester Group/ Code | N | Bahasa Score |
| :---: | :---: | :---: |
| 1 | 617 | 2.85 |
| 2 | 1096 | 2.78 |
| 3 | 747 | 2.82 |
| 4 | 1024 | 2.78 |
| 5 | 81 | 2.65 |
| 6 | 486 | 2.86 |
| 6 | 554 | 3.41 |
| 7 | 211 | 2.88 |
|  | 8 | 52 |
| 14 | 2.84 |  |
|  | 10 | 1 |
| Missing | 714 | 4.00 |
| Total | 4883 |  |

Table 8.19 A shows the differences in the numbers of students who took Bahasa Indonesia (Indonesian Language) in the different semesters. However, there are very few students who took Bahasa Indonesia in certain semesters. Consequently, it is necessary to collapse a small number of cases in certain categories into one category. A decision is made to combine these semester categories into year groups.

From the information record in Table 8.19A, and after considerable exploratory examination of the available data, the semester groups are combined into year groups and form the four categories that are recorded in Table 8.20A. This involves several steps to recode groups into Years. First, the several categories of Semester are combined with another category. Then, the combination of semester categories is recoded into Year. The procedures of combining Semester for Bahasa Indonesia into year groups are the same as the procedures carried out for Semester and for English. After recoding semester categories into year groups, it is necessary to put the year categories into groups as Group 1, Group 2, Group 3, and Group 4 as is seen in the first column of Table 8.20A. In order to provide clear information about the
formation of the final Group into Years, it is necessary to record semesters in which students enrolled in Bahasa Indonesia as is described in column 2 of Table 8.20A. However, there are further missing data in the records among the students who are recorded not as having Bahasa Indonesia scores.

Table 8.20A Final Semester Groups and their Bahasa Indonesia Scores

| Code | Semester Group | Bahasa Indonesia |  |
| :---: | :---: | :---: | :---: |
|  | Final Group into Year | N | Mean Score |
| 1 | Year 1 (semester 1, 2) | 1713 | 2.80 |
| 2 | Year 2 (semester 3, 4) | 1771 | 2.79 |
| 3 | Year 3 (semester 5,6) | 567 | 2.83 |
| 4 | Year 4 (semester 7, 8, 9, 10, 11) | 832 | 3.22 |
|  | Missing | 714 |  |
|  | Total | 4883 |  |
|  | Product Moment Correlation (r) | 0.17 (sig.) |  |

The four groups that form the final semester grouping have clearly identified meanings. A simple code value, as a whole number, is assigned to each of the four groups. This code value is recorded in the initial column of Table 8.20A. This code value does not indicate the level of groups based on the mean scores of the students. This is a coding obtained from the results of collapsing some categories into one category. Interestingly, this coding provides evidence of a relationship with student performance, as is indicated by the product moment correlation recorded at the foot of Table 8.20A that is obtained from the use of Groups 1 to 4.
Moreover, there are slightly larger differences between the four year groups with respect to the Bahasa Indonesia scores. These differences are indicated by the sizes of the intraclass correlation coefficient $(r h o=0.054)$, that is statistically significant.

Table 8.21 A records the results of analyses of variance that examine the statistical significance of the scores for the Bahasa Indonesia scores under consideration, together with the associated intra-class correlation.

Table 8.21A Analyses of Variance for Differences between the Year Groups

|  |  | Sum of <br> Squares | df | Mean <br> Square | F | Intraclass <br> Correlation | Sig. |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| BAHASA | Between Groups | 122.925 | 3 | 40.975 | 71.028 | rho $=0.054$ | .000 |
| INDONESIA | Within Groups | 2814.622 | 4879 | .577 | $\mathrm{~m}=1221$ |  | $($ sig. $)$ |
|  | Total | 2937.547 | 4882 |  |  |  |  |

$\mathrm{m}=$ mean number of students in the 5 year groups

It can be seen that there are statistically significant differences between the four year groups for the Bahasa Indonesia scores as is indicated by the p value that is less than 0.01 . These differences are examined by the size of the intra-class correlations coefficient.

Figure 8.7A presents the differences in the scores between the four year groups for the Bahasa Indonesia scores.

BAHASA INDONESIA

rho $=0.054$
$\mathrm{r}=0.17$
Figure 8.7A Graphs of Performance by Year (Semester) for Bahasa Scores
Category codes 1; $1^{\text {st }}$ Year (Semester 1 and 2), 2; $2^{\text {nd }}$ Year (Semester 3 and 4), 3; $3^{\text {rd }}$ Year (Semester 5 and 6), $4 ; 4^{\text {th }}$ Year (Semester 7, 8, 9, 10, and 11).

The graph shows that Group 4, that is students who took Bahasa Indonesia in the fourth and later years (Semesters 7 to 11) achieve at a noticeably higher level that the other year groups. It is surprising when it is compared to the students who took Bahasa Indonesia in the first and second years (Groups 1 and 2) in which students perform worse than students who took Bahasa Indonesia in a later year. The graph indicates that the later the year students enrol in Bahasa Indonesia, the higher the scores that students obtain.

Nevertheless, the product moment and intra-class correlations indicate that there are small relationships between the values recorded on the Year (semester originally) variable. Thus the performance of the students in the Year groups relate in general to the levels of achievement as is indicated by their Bahasa Indonesia scores during the earlier and later years of the course.

## Gender

Both in developing and developed countries, studies about understanding gender differences in educational performance are becoming of increasing interest. A concern with gender differences in educational performance, in particular, is linked to evidence from the results obtained from a variety of international and local assessment programs of educational achievement. Efforts have been made to examine gender differences with respect to educational outcome in order that the gender gap can be closed, or at least reduced (OECD, 2001).

Among many scholars in education, there has been a preference to refer to 'gender' rather than 'sex' differences (Keeves and Slade, 1998). This is because gender differences are environmental, while sex differences are considered to be largely genetic. Gender is considered to be a social construct, while sex is more the biological category to which a person belongs. A more detailed discussion about the relationships between gender and educational outcomes is given in Chapter 4.

Gender is one of the variables in the dataset that is labelled as a categorical variable. This variable has two categories, male and female. Since the University recorded data on Gender in the form of a string variable that is labelled as male and female, it has to be converted into numeric form in order that the data can be submitted to the statistical analyses. Table 8.22A describes classification of the Gender and Mean Performance Scores by the sex of the student.
Table 8.22A Classification of Gender and Mean Performance Scores.

| Code | Gender | N | GPA <br> Score | N | Bahasa <br> Indonesia Score | N | English 2 <br> Score |
| ---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 0 | Boys | 3426 | 3.08 | 2893 | 2.80 | 3230 | 2.79 |
| 1 | Girls | 2171 | 3.18 | 1991 | 3.00 | 2105 | 2.73 |
|  | Missing | - | - | 713 | - | 262 | - |
|  | Total | 5597 | 3.12 | 4884 | 2.88 | 5335 | 2.76 |
|  | Product Moment |  | 0.18 <br> (sig.) |  | 0.11 (sig.) | -0.05 (not <br> sig.) |  |

Table 8.22A shows that for the three outcomes, the number of male students is larger than the number of female students. Moreover, there are further missing data in the records for the students who are not recorded as having Bahasa Indonesia and English 2 scores.

It can be seen from Table 8.22A that girls have slightly higher means scores for GPA, and Bahasa Indonesia, but not English 2. The code value that is recorded in the initial column of Table 8.22A indicates that male students are labelled as 0 , while
female students are labelled as 1 . However, it is worth noting that the codes 0 and 1 for boys and girls respectively do not mean that girls are placed in a higher position than boys. The values of 0 and 1 are just numbers that do not indicate their level of performance. This coding provides evidence of a relationship with student performance, in particular for GPA and the Bahasa Indonesia scores, as are indicated by the product moment correlations recorded at the foot of Table 8.22A. The evidence presented indicates that student performance, both during the university course with respect to the Bahasa Indonesia scores and after completion of the university course with respect to GPA scores are related to the sex of the students. Student performance with respect to the English 2 scores does not correlate with the sex of students, since there is not a statistically significant relationship with a correlation $\mathrm{r}>-0.05$ being not significant at the 5 per cent level, and with a negative sign. The negative sign indicates a slightly higher value of English 2 mean score for boys than for girls.

Nevertheless, there are some small but statistically significant differences associated with sex of student and with respect to GPA, the Bahasa Indonesia scores, and the English 2 scores. Table 8.23 A records the results of analyses of variance that examine the statistical significance of the scores for the three outcomes under consideration, together with the associated intraclass correlations.
Table 8.23A shows that there are statistically significant differences between the sex groups for all three criteria: GPA, the Bahasa Indonesia, and English scores. The magnitudes of these differences are indicated by the sizes of the intraclass correlation coefficients.
Table 8.23A Analysis of Variance for Differences between Sex of the Student with language Scores

| Outcome |  | Sum of <br> Squares | df | Mean <br> Square | F | Intraclass <br> Correlation | Sig. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GPA | Between Groups <br> Within Groups Total | $\begin{array}{r} 13.248 \\ 412.875 \\ 426.123 \\ \hline \end{array}$ | $\begin{gathered} 1 \\ 5595 \\ 5596 \\ \hline \end{gathered}$ | $\begin{aligned} & 13.248 \\ & .074 \end{aligned}$ | $\begin{aligned} & 179.526 \\ & \mathrm{~m}=2798 \end{aligned}$ | rho $=0.06$ | $\begin{gathered} .000 \\ \text { (sig.) } \end{gathered}$ |
| BAHASA <br> INDONESIA | Between Groups <br> Within Groups <br> Total | $\begin{array}{r} 36.328 \\ 2901.984 \\ 2938.312 \end{array}$ | $\begin{gathered} 1 \\ 4882 \\ 4883 \end{gathered}$ | $\begin{aligned} & 36.328 \\ & .594 \end{aligned}$ | $\begin{gathered} 61.114 \\ m=2442 \end{gathered}$ | rho $=0.02$ | $\begin{gathered} .000 \\ \text { (sig.) } \end{gathered}$ |
| ENGLISH 2 | Between Groups <br> Within Groups <br> Total | $\begin{array}{r} 9.977 \\ 2931.240 \\ 2941.218 \end{array}$ | $\begin{gathered} 1 \\ 5333 \\ 5334 \end{gathered}$ | $\begin{aligned} & 9.977 \\ & .550 \end{aligned}$ | $\begin{gathered} 18.153 \\ m=2667 \end{gathered}$ | rho $=0.006$ | $\begin{gathered} .000 \\ \text { (sig.) } \end{gathered}$ |

There are slightly larger differences in the English 2 scores between the two sex groups and very small differences between the two groups for the GPA and Bahasa Indonesia scores.

Figure 8.8 A presents the differences in the scores between the sex groups for the GPA, the Bahasa Indonesia and the English 2 scores respectively.

It can be seen from Figure 8.8A that for the GPA, the Bahasa Indonesia and the English scores female students perform at a slightly higher level than male students, but the gender differences are seen to be small. Nevertheless, the product moment correlations indicate that there are significant relationship between the values recorded for the sex scale variable and the performance of the students of the sex groups relating to the initial levels of achievement on the Bahasa Indonesia tests prior to enrolling in a course as well as their Grade Point Averages on the completion of the course, although the magnitudes of the intraclass correlations are very small.

rho $=0.06$ (for GPA); rho $=0.02$ (for Bahasa Indonesia); rho $=0.006$ (for English 2) $\mathrm{r}=0.18$ (for GPA); $\mathrm{r}=0.11$ (for Bahasa Indonesia); $\mathrm{r}=-0.05$ (for English 2)

Figure 8.8A Graphs of Performance by Gender for GPA, Bahasa Indonesia and English Scores
Category codes: 0 for male; 1 for female
Figure 8.8A also shows that even though female students have higher scores in GPA and Bahasa Indonesia results, males are slightly stronger in their English language performance. Female students are better in Bahasa Indonesia, but slightly worse in English 2.

## Age

The datasets contains two different variables concerning age. The first variable is age of students at the time of starting the University course, while the second variable is the age of students at the time of completing the University course. Consequently, this section has two parts and each part is considered separately. This section discusses the relationships between age and the two different educational outcomes. First, the discussion considers the relationships between students' performance at the beginning of the University course that is indicated by Bahasa Indonesia and English 2 scores, and the students' age close to the time of first starting the University language course. Second, the discussion considers the relationships between students' performance at the completion of the University course that is indicated by their GPA scores and their age at the time of completing the course.

## Age at the Initial Stage of the University course

In statistics, age is usually considered to be a continuous variable. However, in some situations age can be condensed into a categorical variable. There are two reasons as to why categorizing the variable Age is considered to be important. First, condensing a variable involves collapsing several categories into fewer groups since there are some categories with a small number of cases. Second, another reason for condensing a variable Age is because a researcher may want to create a new variable, for example 'generation' that classifies the variable into three categories that are youth, younger adult, and older adult.

In this study, Age indicates how old students were at the time the data were recorded. In the dataset, Age is entered in the form of date of birth. In order that the data can be included in the statistical analyses, it has to be converted into numeric form. The value of age is obtained by calculating students' dates of birth relative to the students' date of enrolling at the University. From the result of these calculations, the value of the Age variable is created. However, it is important to note that the age of a student is not recorded in decimal form. Therefore, the datasets only record the age in terms of years for each student, such as 15,16 , or 17 years, and do not record it more exactly by using months or a decimal fraction. The variable Age is recoded into several groups in order that statistical analyses can be carried out. The results of SPSS Descriptive Statistics recorded that the minimum age for the students in the datasets is 15 years, while the maximum age for the students is 30 years. However,
the results of the frequency distribution records that there are some year groups that have a small number of cases. In order to obtain meaningful results from statistical analyses, categories with a small number of cases are collapsed into fewer groups. Table 8.24 A indicates categories of age recorded from the University datasets, and records the scores of the groups with respect to the age of a student.
Table 8.24A Classification of Age of Student and Mean Performance Scores

| Code | Age of Student | N | Bahasa Indonesia <br> Score | N | English 2 <br> Score |
| ---: | :--- | :--- | :--- | :--- | :--- |
| 1 | 15 | 1 | 3.50 | 1 | 3.00 |
| 2 | 16 | 7 | 2.71 | 7 | 3.50 |
| 3 | 17 | 308 | 2.86 | 348 | 3.00 |
| 4 | 18 | 2941 | 2.89 | 3168 | 2.80 |
| 5 | 19 | 1409 | 2.88 | 1567 | 2.70 |
| 6 | 20 | 187 | 2.72 | 202 | 2.65 |
| 7 | 21 | 22 | 2.61 | 28 | 2.54 |
| 8 | 22 | 3 | 2.50 | 3 | 2.00 |
| 9 | 23 | 3 | 2.67 | 5 | 3.00 |
| 10 | 24 | 2 | 2.75 | 2 | 3.25 |
| 11 | 28 | 0 | . | 1 | 4.00 |
| 12 | 29 | 0 | 2.00 | 2 | 2.00 |
| 13 | 30 | 1 | 2.00 | 10 | 2.50 |
|  | Total | 4884 |  | 5336 |  |

Table 8.24 A also shows that several age groups have very small numbers of cases, while some of the groups indicate that students who are 18 and 19 years old have larger numbers of cases. After conducting an exploratory examination of the available data and in order to obtain a meaningful examination of the available data, it is necessary to combine these groups with very small numbers of cases into fewer groups. Consequently this procedure reduces the number of categories. There are four categories in the Age grouping that are recorded in Table 8.25A. Group 1 is the Age group that is classified as less than 18 years old ( $>18$ ). Group 2 is the group of students who are 18 years old. Group 3 is the group of students who are 19 years old. Group 4 is the group of students who are greater than 19 years old ( $>19$ ). Moreover, it is necessary after forming age groups to calculate a mean for each group to identify which group has the highest Bahasa Indonesia scores, and English 2 scores. GPA scores are not recorded by the University at this stage.

The four groups that form the final age grouping have clearly identified meanings. A simple code value, as a whole number, is assigned to each of the four groups, with a value that is consistent with the rank ordering of the age groups. This code value is recorded in the initial column of Table 8.25A. The smaller the code values assigned,
the smaller the age of the groups involved. The code values recorded in Table 8.25A do not indicate the levels of achievement that the groups have. These values are only the natural order of the age groups that start from the younger groups to the older groups. However, this coding does not provide evidence of a strong relationship with student performance as is indicated by the product moment correlations recorded at the foot of Table 8.25A.

Table 8.25A Final Age Groups and their Bahasa Indonesia and English Scores

|  | Age Group | Original Group | Bahasa Indonesia |  | English 2 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code | Final Group |  | N | Mean Score | N | Mean Score |
| 1 | <18 | Group $1(15,16,17)$ | 316 | 2.86 | 356 | 3.00 |
| 2 | 18 | Group 2 (18) | 2941 | 2.89 | 3168 | 2.79 |
| 3 | 19 | Group 3 (19) | 1409 | 2.88 | 1567 | 2.66 |
| 4 | >19 | Group 4 (20, 21, 22, $23,24,28,29,30)$ | 218 | 2.70 | 244 | 2.64 |
|  | Missing |  | 713 |  | 260 |  |
|  | Total |  | 4884 |  | 5335 |  |
|  | Product Moment Correlation (r) |  | -0.03 (not sig.) |  | -0.105 (sig.) |  |

Interestingly, the negative signs of the product moment correlation coefficients provide evidence that younger students perform slightly better than older students. The evidence presented indicates that student performance before completion of the university course is not strongly related to the age of the students.

Nevertheless, there are some small but statistically significant differences between the four age groups with respect to Bahasa Indonesia and English 2 scores. Table 8.26A records the results of the analyses of variance that examine the statistical significance group differences in the scores for the two language outcomes under consideration, together with the associated intra-class correlations.
Table 8.26A shows that there are statistically significant differences between the age groups for both the Bahasa Indonesia and English 2 scores as are indicated by a pvalue that is less than 0.01 .

Table 8.26A Analysis of Variance for Differences between Age of the Student

| Outcome |  | Sum of <br> Squares | df | Mean <br> Square | F | Intraclass <br> Correlation | Sig. |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| BAHASA | Between Groups | 6.899 | 3 | 2.300 | 3.828 |  | .009 |
| INDONESIA | Within Groups | 2931.413 | 4880 | .601 | $\mathrm{~m}=1220.75$ | rho $=0.002$ | (sig.) |
|  | Total | 2938.312 | 4883 |  |  |  |  |
| ENGLISH 2 | Between Groups | 35.694 | 3 | 11.898 | 21.830 | rho $=0.015$ | .000 |
|  | Within Groups | 2905.524 | 5331 | .545 | $\mathrm{~m}=1334$ |  | (sig.) |
|  | Total | 2941.218 | 5334 |  |  |  |  |

The results for the intra-class correlation indicate that there are smaller differences in the English 2 and slightly larger differences between groups for the Bahasa Indonesia scores.

Figures 8.9 A (a) and (b) record the differences in the scores between the age groups for the Bahasa Indonesia and the English 2 scores.


Figures 8.9A Graphs of Performance by Age for Bahasa Indonesia and English Scores

Category codes 1 ; less than 18 years old ( $<18$ ), 2; 18 years old, $3 ; 19$ years old, 4 ; More than 19 years old (>19).

It can be seen from Figure 8.9A (a) that for the Bahasa Indonesia scores, students who are in Group 2 (18 years old) have the best performance in Bahasa Indonesia, followed by students in Group 3 (19 years old) and students in Group 1 (less than 18 years old) respectively. However, when students get older, the mean scores of the students drop noticeably as is shown by the performance of students in Group 4 who are more than 19 years old. There are significant differences in the mean scores, in particular between the first three groups that are Groups 1, Group 2, Group 3, and

Group 4. The graph indicates that younger students in Group 1, 2, and 3 perform better in Bahasa Indonesia than the older students in Group 4.

For the English 2 scores, Group 1 that is the students who are less than 18 years old achieve at the highest level in their mean scores. This group performs better than the other three groups. There is a decrease in the mean scores in English 2 as students get older. Figure 8.9A (b) shows the order of the achievement levels of the groups of students. Group 1 is classified as the best performing group, followed by Groups 2, 3 , and 4 respectively. There are significant differences in the mean scores between students in Group 1 and Group 4. Students in Group 4, that is students who are more than 19 years old, have the worst performance. The graph indicates that the younger groups of students outperform the older groups of students.

The graphs in Figures 8.9A (a) and (b) also record that those students who are classified in the Group 4 (more than 19 years old) have the lowest level of performance in both Bahasa Indonesia and English 2. Although the patterns of the students' achievement level in Figures 8.9A (a) and (b) are different, both figures indicate that in general younger students are stronger in their language skills. Nevertheless, the product moment and intra-class correlations indicate that there are only very weak relationships between the values recorded for the Age variable, with the younger students in the Age groups achieving in general higher levels of achievement on both the English 2 and the Bahasa Indonesia tests.

## Age at the stage of Completion of the University Course

This section discusses the relationships between the age groups at the time of completing the University course and the students' performance that is indicated by their GPA scores. The results of analysis using Descriptive Statistics recorded that the minimum age for the students in the datasets is 20 years, while the maximum age for the students in the sample is 32 years. Table 8.27 A presents the categories of age recorded from the University datasets, and records the scores of the groups with respect to the ages of the students.

Table 8.27A Classification of Age of Student and their GPA Scores

| Code | Age of Student | N | GPA Score |
| :---: | :---: | :---: | :---: |
| 1 | 20 | 5 | 3.07 |
| 2 | 21 | 50 | 3.17 |
| 3 | 22 | 301 | 3.20 |
| 4 | 23 | 941 | 3.19 |
| 5 | 24 | 1519 | 3.15 |
| 6 | 25 | 1438 | 3.11 |
| 7 | 26 | 817 | 3.06 |
| 8 | 27 | 329 | 2.98 |
| 9 | 28 | 126 | 2.86 |
| 10 | 29 | 46 | 2.81 |
| 11 | 30 | 16 | 2.93 |
| 12 | 31 | 6 | 2.79 |
| 13 | 32 | 3 | 2.74 |
|  | Total | 5597 | 3.11 |

However, the results of the frequency distribution show that there are some age groups that have a small number of cases. In order to obtain meaningful results from the statistical analyses, categories with a small number of cases are combined into fewer categories. Table 8.27A also shows that several age groups have a very small numbers of cases, while some the groups indicate that students who were 24 and 25 years old have larger numbers of cases. After conducting an exploratory examination and in order to obtain a meaningful examination of the available data, it is necessary to combine these groups with very small numbers of cases into fewer groups.
Consequently, six categories in the Age groups are formed and recorded in Table 8.28A. Moreover, it is considered to be important to form groups and to calculate a mean for each group to identify which group has the largest GPA scores.
Table 8.28A Final Age Groups and their GPA Scores

| Code | Final Group of Age | Original Group of Age | GPA |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | N | Mean Score |
| 1 | <23 | 20, 21, 22 | 356 | 3.20 |
| 2 | 23 | 23 | 941 | 3.19 |
| 3 | 24 | 24 | 1519 | 3.15 |
| 4 | 25 | 25 | 1438 | 3.11 |
| 5 | 26 | 26 | 817 | 3.06 |
| 6 | $>26$ | 27,28,29,30,31,32 | 526 | 2.93 |
|  | Missing |  | 1 |  |
|  | Total |  | 5596 |  |
|  | Product Moment Correlation (r) |  | -0.25 (sig.) |  |

The six groups that form the final age grouping have a clearly identified meaning. A simple code value, as a whole number, is assigned to each of the six groups, with a value that is consistent with the rank ordering of the age groups as well as the rank ordering of the mean scores. This is because the results of the one-way analysis of variance present a pattern of the mean scores in an order that is linearly related to the order of the age groups. This code value is recorded in the initial column of Table 8.28A. The smaller the code value assigned the lower is the age of the groups involved. However, the code values recorded in Table 8.28A do not indicate the level of achievement that the age groups have. These values are only the natural order of the age groups that start from the younger groups and rise to the older groups. However, this coding does provide evidence of a relationship with student performance as is indicated by the product moment correlation coefficient recorded at the foot of Table 8.28A. The negative sign of the product moment correlation coefficient provides evidence that younger students perform better than the older students. The evidence presented indicates that student performance after completion of the university course is related to the age of the students. Table 8.29 A records the results of the analysis of variance that examines the statistical significance of the scores for the outcome of GPA scores under consideration, together with the associated intra-class correlation.

Table 8.29A Analysis of Variance for Differences between Age of the Student

|  | Sum of <br> Squares | df | Mean <br> Square | F | Intraclass <br> Correlation | Sig. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Between Groups | 28.858 | 5 | 5.772 | 81.22 | rho $=0.08$ | .000 |
| Within Groups | 397.264 | 5591 | 0.071 | $\mathrm{~m}=932.67$ |  | Sig. |
| Total | 426.123 | 5596 |  |  |  |  |

Table 8.29A shows that there are statistically significant differences between the age groups for the GPA scores. The value of the intra-class correlation indicates that there are small differences between the GPA scores of the six groups. The differences in the mean score between the age groups for the GPA scores can be seen in Figure 8.10A.

Figure 8.10A presents the differences in the scores between the age groups for the GPA scores. It can be seen from the graph that Group 1 which includes students who are less than 23 years old achieves at a noticeably higher level than the other age
groups. The achievement level of Group 1 is successfully lower for Group 2, Group 3, Group 4, Group 5, and Group 6 respectively.


$$
\mathrm{r}=-0.25
$$

Figure 8.10A Graphs of Performance by Age for GPA Scores
Category codes 1 ; less than 23 years old (<23), 2; 23 years old, $3 ; 24$ years old, $4 ; 25$ years old, 5; 26 years old, 6; More than 26 years old ( $>26$ ).

The code value for each of the groups indicates the classification by age of the students. The smaller the code value, the younger are the students involved. Therefore, the graph indicates that the smaller the code, the higher the mean scores that the students achieve. This indicates that younger students perform better than the older students. Moreover, the graph shows that the pattern decreases naturally in line with the order of the age groups of the students. There is a continuous decrease as students get older. The older the age of the students have, the lower are the students' GPA scores. There are significant differences between the mean score obtained by students in Group 1, namely, students who are less than 23 years old and the mean score achieved by students in Group 6, that is, students who are more than 26 years old. Students in Group 1 are students who are categorized as the youngest group, while students in Group 6 are the students who are classified as the oldest group.

Nevertheless, both the product moment and intra-class correlations indicate that there are significant relationships between the values recorded on the Age variable and the performance of the students in the Age groups that relate to their levels of achievement on the GPA scores at the completion of their university course.

## Appendix 9.1A: Key Characteristics of the Speed in Language Learning

Table 9.1A Key Characteristics of the Speed in Language Learning

| No | Dimension | Theoretical Categories | Indicators | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| 1. | Aptitude | Enjoyment | A learner enjoys learning English | 6 |
|  |  |  | I like English | 6 |
|  |  |  | I like learning grammar and structure in English | 3 |
|  |  | Persistence | I never give up easily in learning English | 5 |
|  |  |  | I am patient in learning English | 2 |
|  |  | Importance | I am aware that English is important | 6 |
|  |  | Self-efficacy | I feel confident in learning English | 4 |
|  |  |  | I feel confident that I can learn English | 6 |
|  |  | Self-taught | I teach myself English (an autodidact or self-taught ) | 1 |
|  |  | Parental support | Having opportunities to take an extra (private) English course after school | 2 |
|  |  | Practice in different context <br> (a) Teaching others |  |  |
|  |  |  | Having experienced teaching at high school during study | 2 |
|  |  |  | Having a job as a lecturer of English. | 6 |
|  |  | (b) Speaking | Having opportunities to talk to native- speakers of English | 6 |
|  |  |  | Having opportunities to express ideas and opinions in English | 4 |
|  |  |  | Having opportunities to speak English in relaxed circumstances | 6 |
|  |  | (c) Reading | Having opportunities to read poetry | 1 |
|  |  |  | Having opportunities to read English material | 4 |
|  |  |  | Having opportunities to read dialogues in a book | 1 |
|  |  | (d) Listening | Having opportunities to listen news, songs | 6 |
|  |  |  | Practising listening exercises | 6 |
|  |  | (e) Singing | Having opportunities to sing a song in English | 4 |
|  |  | (f) Strategies | Practising some strategies for doing a test | 1 |
|  |  | (g) Test items | Practising doing some types of test items | 1 |

Table 9.1A (Continued)

| No Dimension | Theoretical Categories | Indicators | Frequency |
| :---: | :---: | :---: | :---: |
|  | Length time of practice | Longer time for learning English | 6 |
|  |  | Length of experience for learning English | 6 |
|  | Status of the language | English is not a first or a second language, but a foreign language | 6 |
|  | Friend | Availability of a friend to practise speaking English | 1 |
|  | Supportive environment | Teacher provides a comfortable environment in the classroom | 1 |
|  | Access to Resources |  |  |
|  | (a) At school | Availability of facilities such as books, computer, internet at school | 6 |
|  | (b) At home | Books, dictionary, computer, internet, novel, CD, DVD, TV, TV Channel, journals, magazines that are in English are available at home | 6 |
|  | Teacher | Availability of a teacher who guides students | 6 |
|  | No-nativization | Being native-like is not demanded, particularly, in spoken language | 6 |
|  | Initiative | Initiating to practise listening | 6 |
|  |  | Initiating to borrow some books from library or friends | 1 |
|  |  | Initiating to copy some pages from a book for doing some exercises | 1 |
|  |  | Initiating and using of a dictionary for difficult words | 6 |
|  | Knowledge of language | Increasing knowledge of grammar and structure | 6 |
|  |  | Increasing vocabulary | 6 |

## Appendix 9.2A: Reasons why learners engage in learning English

Table 9.2A Reasons Why Learners Engage in Learning English

| No | Dimension | Theoretical Categories | Indicators | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| 2. | Perseverance | Economics | Global market | 6 |
|  |  |  | Free market | 6 |
|  |  |  | Providing more opportunities to work in trans-national company | 3 |
|  |  |  | Obtaining promotion in multi-national company | 3 |
|  |  |  | A requirement for getting a job in a big national company | 6 |
|  |  |  | A requirement for getting a job in multi-national company | 6 |
|  |  |  | Getting promotion to a better position | 2 |
|  |  |  | Gaining a better job | 2 |
|  |  |  | English is a language when looking for a job | 6 |
|  |  | Media | Information from overseas can be obtained from TV Channel | 3 |
|  |  |  | English news is available from TV | 2 |
|  |  |  | News and information is printed in English newspaper | 3 |
|  |  |  | Availability of English broadcasting | 2 |
|  |  |  | Popular music broadcasted in English through radios | 3 |
|  |  | Knowledge | Knowledge and original resources about science and technology published in English | 6 |
|  |  |  | Compared to other languages, English still dominates the development of science and technology | 2 |
|  |  |  | English is a language of learning new information and developing existing information | 2 |
|  |  |  | International journals are written and published in English | 6 |
|  |  |  | English is a language for learning other fields | 1 |
|  |  |  | Textbooks are written in English | 4 |
|  |  |  | References and literature are written in English | 2 |
|  |  |  | Joint research results are reported in English | 2 |

Table 9.3A (Continued)

| No | Dimension | Theoretical Categories | Indicators | Frequency |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Technology | Training in using technology run by a foreigner is conducted in English | 2 |
|  |  |  | English is a language to access technology | 6 |
|  |  |  | English is the language of the internet | 6 |
|  |  |  | Today's generation is the electronic generation | 1 |
|  |  |  | Computer provides menu as well as tools written in English | 2 |
|  |  | Education | University Internationalization | 2 |
|  |  |  | Conducting Joint Projects with overseas universities | 2 |
|  |  |  | Conducting Research Exchange with overseas universities | 2 |
|  |  | The major international communication | English is the universal language used in international events such as exhibitions and conferences | 2 |
|  |  |  | English is the international language | 2 |
|  |  |  | English is the language to be used as a means of communication between non-native speakers of English | 2 |
|  |  |  | English is used to make contact with foreigners | 4 |
|  |  | Travelling | The ability to use English provides the opportunity to travel around the world | 6 |
|  |  | Global language | English is the global language to be used in some aspects of life such as education, economics and technology | 6 |
|  |  |  | English is the most important language in the world | 6 |
|  |  |  | English has the largest number of speakers both as the first and the second language | 2 |
|  |  |  | English is largely taught as a foreign language in schools in most parts of the world | 2 |
|  |  |  | English is a language to access knowledge, economics and information as well as technology | 6 |
|  |  |  | Some countries, such as India, Singapore and Malaysia as well as Hong Kong use English as a language of Instruction in schools and universities | 2 |
|  |  |  | Some Asian countries use English as a language for doing business and commerce | 1 |
|  |  |  | Some Asian countries use English as a language in the Government | 1 |

## Appendix 9.3A: The relative importance of being able to read, to write, to listen and to speak in English

Table 9.3A The Relative Importance of being able to Read, to Write, to Listen and to Speak in English

| No | Dimension | Theoretical Categories | Indicators | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| 4 | Perseverance, Opportunity to Learn, and Quality of Instruction |  |  |  |
|  | Reading | Curriculum Development Fluency and reading rate | Developing up to date curriculum | 2 |
|  |  |  | Ability to read an international journal | 6 |
|  |  |  | Ability to read fast | 6 |
|  |  |  | Ability to read some articles quickly | 6 |
|  |  | Knowledge and Information | Ability to synthesize new information | 2 |
|  |  |  | Gaining new information about the development of science and technology | 2 |
|  |  |  | Obtaining deep information from reading | 3 |
|  |  |  | Looking for information | 6 |
|  |  |  | Increasing knowledge | 6 |
|  |  | Pleasure | Entertainment | 3 |
|  | Writing | Ability to Write | Editing journal articles in English | 1 |
|  |  |  | Using a classroom as a place for learning English | 6 |
|  |  |  | Using a classroom as a place for speaking English | 6 |
|  |  |  | Reporting research results in English language | 3 |
|  |  |  | Writing an article for a journal in English | 6 |
|  |  |  | Writing an article in a local or national journal about the use of English | 6 |
|  |  |  | Writing a project proposal in English | 3 |
|  |  |  | Writing a draft report in English | 3 |
|  |  |  | Reviewing a project report in English | 3 |
|  |  |  | Reporting a project result in English | 3 |
|  |  |  | Attending a seminar about writing a journal article | 6 |
|  |  |  | Improving self-discipline to write an article in one semester |  |

Table 9.3A (Continued)

| No | Dimension | Theoretical Categories | Indicators | Frequency |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Ability to Publish | Publishing books in English | 3 |
|  |  |  | Ability to publish a journal article in English | 3 |
|  |  |  | Ability to publish an article in a national journal | 6 |
|  | Listening | Communication | Communication | 6 |
|  |  |  | Expressing and discussing ideas | 3 |
|  |  |  | Transferring knowledge | 6 |
|  |  |  | Sharing information with people from other countries | 6 |
|  |  | Knowledge and Information | Improving vocabulary through authentic materials | 6 |
|  |  |  | Gaining information from the original source | 1 |
|  |  |  | Listening to the feedback from an English person | 1 |
|  |  |  | Listening to the questions, comments and suggestions in English | 1 |
|  |  |  | Ability to listen to a presenter in a seminar | 6 |
|  |  |  | Ability to listen at a workshop about writing for an international journal article | 1 |
|  | Speaking | Communication | Using the class room as a place for using English | 6 |
|  |  |  | Presenting at a national and international conferences | 6 |
|  |  |  | Using English as a medium of instruction in academic setting | 6 |
|  |  |  | Giving some examples in English | 6 |
|  |  |  | Discussing certain topics in English | 6 |
|  |  |  | Having the opportunity to meet and talk to other people from different countries in a common language | 3 |
|  |  |  | Sharing information with people from other countries in a common language | 3 |
|  |  |  | Opportunity for gaining direct information (answer) | 2 |
|  |  |  | Two-way communication | 6 |
|  |  |  | Presenting project results to an audience from many countries | 1 |

## Appendix 9.4A: Experience in learning English as a foreign language

Table 9.4A Experience in Learning English as a Foreign Language

| No | Dimension | Theoretical Coding | Indicator | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| 5 | Opportunity to Learn | Formal learning | Learning English starts from secondary level to tertiary level | 6 |
|  | Ability to Understand Instruction |  | Learning English through grammar based in high school | 6 |
|  | Quality of Instruction |  | Learning English formally | 6 |
|  |  |  | Learning English starts from Junior High School | 6 |
|  |  |  | Teacher taught using audio lingual method | 3 |
|  |  |  | Learning English focused on form, not on use | 6 |
|  |  |  | Continuing study in English Department in University | 6 |
|  |  |  | Learning to speak, to write, listen in university | 6 |
|  |  | Facilities | There is lack of facilities since I come from a small town | 2 |
|  |  | Working hard | I work very hard since English is not my mother tongue | 2 |
|  |  | Non-formal learning | Taking a private English course | 4 |
|  |  |  | Having opportunity to use English with missionaries | 1 |
|  |  |  | Improving self-confidence | 1 |
|  |  |  | Improving vocabularies | 1 |
|  |  | Listening | Singing a song in English | 4 |
|  |  |  | Practising listening at the language laboratory | 6 |
|  |  |  | Practising listening using CD or cassette through tape recorder | 6 |
|  |  |  | Practising listening by watching TV Channel | 1 |
|  |  |  | Watching movie through TV or DVD such as Cartoon and Comedy | 2 |
|  |  |  | Cartoon films such as SpongeBob, Bernard Bear | 2 |
|  |  |  | Comedy film such as Mr Bean | 2 |
|  |  |  | Listening to the music | 6 |
|  |  |  | Watching TV program in English | 3 |
|  |  |  | National Geography | 3 |
|  |  |  | Disney Productions | 2 |
|  |  |  | Entertainment | 6 |
|  |  |  | Listening to what students are saying | 6 |


| Reading | Reading textbooks | 6 |
| :---: | :---: | :---: |
|  | Reading and looking for literature from a library for making a handbook | 6 |
|  | Browsing articles to the internet | 4 |
|  | Reading for professional development | 4 |
|  | Reading a national and international journal articles | 4 |
|  | Reading popular magazines | 2 |
|  | Reading an English newspaper | 2 |
| Writing | Lack of time for writing | 6 |
|  | Publishing articles in local and national journals | 6 |
|  | Writing an email in English | 5 |
|  | With an Indonesian friend | 5 |
|  | With non-native speaker of English | 5 |
|  | Writing small note in English | 2 |
|  | Writing paper in English | 6 |
| Speaking | Using English as a medium of academic instruction when teaching | 6 |
|  | Using English at the Language Laboratory | 6 |
|  | Presenting a paper in a national and an international conference | 5 |
|  | Interacting with a native-speaker of English available in university | 5 |
|  | Attending a guest lecture held by university or departments | 6 |
|  | Practising English with foreigners in a tourist destination | 3 |
|  | Talking English a little to children at home | 6 |
|  | Speaking English a little with friends | 6 |
|  | Talking to a native speaker of English in a conference | 3 |
|  | Being active in using English when taking a private English course | 2 |
|  | Practising English with a friend who just has come back from an overseas university | 1 |
|  | Talking to people at an international conference | 2 |

## Appendix 9.5A: The use of technology in learning English

Table 9.5A The Use of Technology in Learning English

| No | Dimension | Theoretical Coding | Indicators | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| 6 | Opportunity to learn, Quality of Instruction | Improving reading | Browsing articles through the internet to be read on line Downloading articles to be read | $\begin{aligned} & 5 \\ & 6 \end{aligned}$ |
|  |  | Improving listening | Downloading the listening materials through U-tube | 3 |
|  |  |  | Downloading some films through the internet | 4 |
|  |  |  | Practising listening through the internet | 4 |
|  |  |  | Practising listening through CD or cassette | 6 |
|  |  |  | Listening to a tele-conference | 2 |
|  |  |  | Listening to learn cross cultural understanding through tape recorder |  |
|  |  |  | Trying listening tests through the internet | 4 |
|  |  | Improving writing | Writing power point presentation | 5 |
|  |  |  | Creating English web blog | 1 |
|  |  |  | Encouraging students to write English in their own blog | 1 |
|  |  |  | Encouraging students to send their assignment through the lecturer's blog | 1 |
|  |  |  | Encouraging students to send their assignment through email | 4 |
|  |  |  | Looking for synonym words through the internet | 4 |
|  |  |  | Sending an email through the internet |  |
|  |  |  | Making posters that relate to technology | 3 |
|  |  |  | Creating wall magazine and providing more opportunities for students to write | 1 |
|  |  |  | Writing script for movie | 1 |
|  |  |  | Developing e-learning | 1 |
|  |  | Improving speaking | Videoing some conversation among students (making movie) | 1 |
|  |  |  | Participate in a tele-conferences | 1 |
|  |  |  | Showing movie through ' U -tube' and encouraging students to comment | 2 |
|  |  |  | Mobile English course through phone |  |
|  |  |  | Presenting in English by making power point | 5 |

## Appendix 9.6A: The relationship between English and technology

Table 9.6A The Relationship between English and Technology

| No | Dimension | Theoretical Coding | Indicators | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| 7 | Opportunity to learn, Quality of Instruction | Media of learning | Technology can be used as the media for teaching and learning English | 6 |
|  |  |  | Technology can be used in searching for material | 6 |
|  |  |  | Technology, such as web blog, can be used as the media for improving writing | 2 |
|  |  | Language of technology | The default language of technology is English English is used as a language to access | 6 |
|  |  |  | technology | 6 |
|  |  |  | Introducing new technology uses English | 4 |
|  |  |  | Training in new technology uses English since the trainer is from an English speaking country | 1 |
|  |  |  | Training materials are written in English | 1 |
|  |  |  | Instruction on how to operate technology is written in English | 6 |
|  |  |  | The CD manual software is written in English | 6 |
|  |  |  | The software is distributed around the world and the instruction is written in English | 6 |
|  |  |  | English is a language for virtual communication through technology | 6 |
|  |  |  | English is a language of the internet | 6 |
|  |  |  | Western people develop technology, automatically they transfer technology to other countries using their language, English | 6 |

## Appendix 9.7A: Obstacles of Using Technology

| No | Dimension | Theoretical Coding | Indicator | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| 8 | Opportunity to Learn, Quality of Instruction | Type of technology | A lecturer spends a lot of time checking students' blog | 1 |
|  |  | Class size | The larger the number of students in the class, the more time the lecturers spent assessing students | 1 |
|  |  | Cost | Expensive | 5 |
|  |  |  | Not all people are able to afford it | 5 |
|  |  |  | Cheap if there are subsidies for students from the University | 1 |
|  |  | Access | Only limited access is provided or available | 6 |
|  |  |  | Difficult to access | 6 |
|  |  | Time | No time to learn | 2 |
|  |  |  | Time consuming | 6 |
|  |  |  | Wasting time on useless things | 1 |
|  |  | Teaching Load | Teaching overload | 6 |
|  |  | Age | Too old to learn | 3 |
|  |  | Ability | Lacks ability to use technology | 3 |
|  |  | Availability | Lack of facilities | 6 |

## Appendix 9.8A: Adapting the English language to meet better the learning needs of students

Table 9.8A Adapting the English Language to Meet Better the Learning Needs of Students

| No Dimension | Theoretical Categories | Indicator | Frequency |
| :---: | :---: | :---: | :---: |
| Ability to Understand Instruction | Placement Test | Undertaking Placement Test to understand student's grade level | 6 |
|  |  | Using the results of the test to place students in the appropriate class | 6 |
|  | Ability Grouping | Placing students based on student's grade level | 6 |
|  |  | Grouping students based on their ability | 6 |
|  | Curriculum | Providing students with different curricula for different grade levels | 6 |
|  |  | Synergizing between curriculum content and market need | 2 |
|  | Treatment | Providing a different treatment for students who have different | 3 |
|  |  | levels of English ability |  |
|  |  | Understanding student's weaknesses in learning the English language | 1 |
|  | Opportunity to Learn | Lack of opportunity to learn English | 6 |
|  |  | Offering two credit units with one or two skills | 6 |
|  |  | Providing a different number of credit units based on each student's need | 1 |
|  |  | Adding no credit unit for English 2, but it is compulsory for students | 1 |

## Appendix 9.9A: Assisting students learn English

| No | Dimension | Theoretical Categories | Indicators | Frequency |
| :---: | :---: | :---: | :---: | :---: |
| 11 | Quality of Instruction | Expectation | Introducing lecturers' expectation at the first English meeting in the class | 1 |
|  |  | Importance of English | Realizing the importance of English | 6 |
|  |  |  | Not to underestimate English language lesson | 1 |
|  |  |  | Not to underestimate an English test | 1 |
|  |  |  | Learning English is not only for passing a test | 6 |
|  |  |  | English is a language for looking for a job | 6 |
|  |  | Motivation | Motivate students to learn English | 6 |
|  |  |  | Understanding student's motivation for learning English | 6 |
|  |  |  | Group work or group discussion | 3 |
|  |  |  | Giving reward and appreciation | 3 |
|  |  |  | Providing good grade | 1 |
|  |  |  | Provide students with a role model of successful learner of English | 1 |
|  |  |  | Bring one or two of their seniors to the class to talk about their experience in an international event | 1 |
|  |  |  | Giving students opportunity to provide for their topic of interest | 6 |
|  |  |  | Giving students opportunity to present their topic of interest | 6 |
|  |  |  | Advising students to take an extra (private) English course | 5 |
|  |  |  | Giving oral praise | 3 |
|  |  |  | Helping students write scholarship applications for participating in student exchange to overseas university | 3 |
|  |  |  | Providing a letter of recommendation for students who are applying for studying in an overseas university. | 3 |
|  |  | Language of Instruction | Using instructions in English | 1 |
|  |  |  | Using instruction in Bahasa Indonesia and English | 5 |
|  |  | Assessment | No judging straightaway that students are bad in English | 1 |
|  |  |  | Reassessing students why they find English difficult | 1 |
|  |  | Consultation | Providing consultation time outside classroom activities | 1 |

Table 9.9A (Continued)

| No Dimension | Theoritical Categories | Indicators | Frequency |
| :---: | :---: | :---: | :---: |
| 11 Quality of Instruction | Strategy Training | Sharing learning strategies with students |  |
|  |  | Sharing testing strategies | 6 |
|  |  | Sharing listening strategies | 6 |
|  |  | Sharing reading strategies | 6 |
|  |  | Sharing speaking strategies | 6 |
|  |  | Providing different strategies for learning four English skills | 6 |
|  | Placement Test Methods | Understanding student's level of English ability by conducting PRETEST | 6 |
|  |  | Creating group discussion to compete positively | 1 |
|  |  | Trying a variety of teaching strategies | 4 |
|  |  | Offering interesting teaching methods | 5 |
|  |  | Lecturing is necessary but not essential | 6 |
|  | Note or Hand out Resources | Providing notes before the lecture | 1 |
|  |  | Pointing to resources | 6 |
|  |  | Borrowing books | 1 |
|  | Homework <br> University Policy | Giving homework | 4 |
|  |  | Improving the number of credit unit | 6 |
|  |  | Considering the process, not just the output | 6 |
|  |  | Using the results of PRETEST for new students | 6 |
|  |  | The result of POSTTEST is not used as a requirement for graduation | 6 |
|  |  | Establishing English club supervised by a lecturer | 2 |
|  |  | Providing intensive meeting with different topics in English club, and socio-economic environment | 1 |
|  |  | Providing facilities that relate to English, books, and films | 6 |
|  |  | Providing access to teacher professional development | 6 |
|  |  | Reducing the teaching load | 6 |
|  |  | Providing grants to motivate lecturers to present a journal article at an international conference | 6 |
|  |  | Increasing the number of credit units based on the student's grade level | 6 |
|  |  | Providing extra credit units and compulsory for students | 6 |
|  |  | Providing rooms for English classes only | 1 |
|  |  | Providing interventions for students who are not able to pass TOEFL | 6 |

## Appendix 10.1A: Speed of language learning

## Dimension: Aptitude

Question: How Easy do You Find it to Learn English?
Table 10.1A Speed in Language Learning


Table 10.1A (Continued)


Table 10.1A (Continued)

| Aptitude |  | High Group | Freq. | Medium Group | Freq. | Low Group | Freq. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Commitment |  |  | Learning English seriously | 1 |  |  |
|  |  |  |  | Concentrating in learning English | 1 |  |  |
|  |  |  |  | Spending extra time for learning English | 1 |  |  |
|  | Interaction |  |  | It is easy to learn English when I am interacting with people who use English | 1 |  |  |
|  |  |  |  | I find it easy to learn English when I interact with foreigners in social networking | 1 |  |  |
|  | How Lecturers Teach Student | It depends on the way lecturer teaches us | 2 |  |  |  |  |
|  | Culture | Culture differences can influence the speed in language learning | 1 |  |  |  |  |
|  | Status | We can learn a language quickly if it is our mother tongue | 1 |  |  |  |  |
|  | Nativization | It is difficult to be native-like | 1 |  |  |  |  |
|  | Word familiarity | It is easy to learn English when a speaker does not use specific terms, words or proverbs | 1 |  |  |  |  |

## Appendix 10.2A: Reasons why it is necessary to learn English

Dimension: Perseverance and Motivation
Question: Do You Think It is Necessary to Learn English?
Table 10.2A Reasons Why Tt is Necessary to Learn English


Table 10.2A (Continued)


## Appendix 10.3A: Quality of Instruction

## Dimension: Quality of Instruction

Question: How can the Lecturer Better Help You Learn English?
Table 10.3A Quality of Instruction

| Group Level |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dimension | Categories | High Group | Freq. | Medium Group | Freq. | Low Group | Freq. |
| Quality of Instruction | Strategy Instruction | Instruction is conducted using a combination of English and Indonesian | 10 |  |  |  |  |
|  | English Day |  |  |  |  |  |  |
|  |  | Establishing English Day | 3 | English Day at each department at ITS | 2 |  |  |
|  | Speaking ability | Lecturers are able to speak English before encouraging students to speak it | 10 |  |  |  |  |
|  | Professional Development | Providing speaking course for lecturers | 5 |  |  |  |  |
|  | Methodology | Providing a variety of teaching methodology | 3 | Grammar focus is not appropriate anymore | 2 | Using a good approach | 1 |
|  | Hand out | Lecturers provide hand out in English | 6 |  |  |  |  |
|  | Module | Lecturers of other subject matters provide module in English | 1 |  |  |  |  |
|  | Motivational strategies | Lecturers motivate students to read a journal in English | 1 |  |  | Encouraging students to talk in English <br> Encouraging students to answer question orally | 1 |
|  | Opportunity to use | There is an opportunity to use English in the classroom, besides English class There is an opportunity to use grammar that is learned | 2 1 | English class is designed for presentation | 2 | Encouraging students to present in English | 1 |
|  |  | There is an opportunity to submit assignment in English There is an opportunity to submit thesis | 1 | There is an opportunity to use English in the classroom | 2 | Inviting a foreigner in a class to have a talk with students | 1 |
|  |  | in English |  | Writing a paper in English Presentation in other subject studies is | 1 |  |  |
|  |  | Lecturing is conducted in English Other subject studies use English in presentation | $4^{1}$ | conducted in English | 5 |  |  |

Table 10.3A (Continued)


Table 10.3A (Continued)

| English library |  |  | Establishing a library that provides for English only <br> There is an opportunity to practice listening at the library <br> There is a room discussion in English at the library <br> University Library needs to provide books that relate to English language besides Science and Technology <br> Establishing English library at each department <br> Departments do not only provides books that relate to their subject matters but also English | 2 |
| :---: | :---: | :---: | :---: | :---: |
| Guidance |  |  | Lecturers correct our pronunciation | 2 |
|  |  |  | Lecturers make us discipline in using English | 2 |
| Role model | A lecturer should be a role model for students <br> A lecturer invites a lecturer who was activist to give a talk in the class The University should empower its own lecturers as role models for students | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ |  |  |
| Entertainment | The university should provide a game centre on the weekend | 1 |  |  |
|  | Inviting an expert game to give a talk Inviting an international comic expert to give a talk | 1 |  |  |
| Task familiarity |  |  | We are not familiar in listening | 3 |
|  |  |  | The speaker talks too fast | 2 |
|  |  |  | Lecturers repeat it many times | 4 |
|  |  |  | Listening is difficult | 4 |
|  |  |  | What we listen and what the speaker talks are not the same We are afraid of making mistake | 2 |

## Appendix 10.4A: Ability to Understand Instruction

Dimension: Ability to Understand Instruction
Question: In what ways can learning be adapted to meet better the ability needs of each student?
Table 10.4A Ability to understand instruction

| Group Level |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dimension | Categories | High Group | Freq. | Medium Group | Freq. | Low Group | Freq. |
| Ability to Understand Instruction | Opportunity to learn | Adding number of credits | 5 | There is lack of opportunity to learn English | 3 | The number of credit unit need to improve | 4 |
|  |  | English is used in other subject matters | 2 | We only meet once a week in one semester during my study | 1 | There are only two credit units during candidature | 5 |
|  |  | Having English each semester | 2 | Improving the number of credit units | 2 | We had English every year in high school | 2 |
|  |  | Having English for six semester There is lack opportunity to learn English | 1 5 |  |  | It is better to have English every year | 5 |
|  | PRETEST | Students should know the result of Pretest | 5 |  |  | The results of PRETEST should be used | 3 |
|  |  | The results are only for developing | 1 |  |  | PRETEST is only used for testing ability | 1 |
|  |  | The test is only for competition | 1 |  |  |  |  |
|  | Mixed ability | It is not necessary to group students ability | 5 |  |  | I feel sorry with students if there is no smart students in the class | 1 |
|  |  | No discrimination | 1 |  |  | Nobody helps since there are no smart students | 1 |
|  |  | Sharing knowledge between high achievers and low achievers | 2 |  |  | It is better for having mixed ability | 1 |
|  |  |  |  |  |  | Low achievers can ask high achievers | 1 |
|  |  |  |  |  |  | Low achievers will be shy to ask | 1 |
|  | Strategy Instruction | Instruction is conducted using mixed Indonesian English | 4 |  |  |  |  |
|  |  | Instruction is conducted in English | 3 |  |  |  |  |
|  | Opportunity to use | Learning English is not only doing exercises | 2 | Opportunity to use English is very little There is lack of motivation to use | 3 |  |  |
|  |  | Practising using English is necessary | 2 | English <br> There is lack of support from environment | 2 3 |  |  |

Table 10.4A (Continued)


## Freq.=Frequency

## Appendix 10.5A: The importance of being able to listen, read, write, and speak English

## Dimension: Opportunity to Learn

Question: How important is it to listen, read, write, and speak English? Is one skill more useful than others?
Table 10.5A The importance of being able to listen, read, write, and speak English

| Dimension | Group level |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | High Group | Freq. | Medium Group | Freq. | Low Group | Freq. |
| Perseverance <br> Opportunity to learn <br> Quality of Instruction |  |  |  |  |  |  |
| Listening | Understanding what we are going to talk <br> Understanding what we are going to do Understanding what we are thinking | $\begin{aligned} & 1 \\ & 1 \\ & 1 \end{aligned}$ | Understanding conversation in a film | 1 | Responding to native-speaker of English Being familiar to what native-speaker of English is saying | 1 1 |
|  |  |  | Communicating with someone else <br> Interacting with people <br> Doing English test without looking at someone's face <br> Improving TOEFL score <br> Understanding English varieties | 1 |  |  |
|  | Understanding what people are talking Catching an emotional feeling of the speaker | $\begin{aligned} & 2 \\ & 1 \end{aligned}$ | Understanding what people are talking | 1 |  |  |
|  | Understanding how people pronounce words | 1 | Understanding how people pronounce words | 1 |  |  |
|  | Absorbing information properly | $1$ | Absorbing information properly <br> How much information we can obtain | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ |  |  |
|  | Avoiding reduction of the original information we obtain Understanding knowledge in the process of learning <br> Ability to sing a song, remember a song, understand the meaning of the song Enriching vocabularies because we listen new words <br> Ability to present in public | $\begin{aligned} & 2 \\ & 2 \\ & 1 \\ & 2 \\ & 1 \end{aligned}$ |  |  |  |  |

Table 10.5A (Continued)

| Dimension |  |  | Group level |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | High Group | Freq. | Medium Group | Freq. | Low Group | Freq. |
| Reading | Comprehending a handbook or textbook written in English | 1 |  |  |  |  |
|  | Understanding the content of literature | 5 | Understanding the content of a literature | 1 |  |  |
|  |  |  |  |  | Obtaining information | 1 |
|  |  |  |  |  | Understanding a certain topic | 1 |
|  |  |  |  |  | Increasing new vocabulary | 1 |
|  | Ability to operate computer | 1 |  |  |  |  |
|  | Understanding what people write | 1 |  |  |  |  |
|  | Understanding what we read | 1 |  |  |  |  |
|  | Ability to read literature in English without translating it in Indonesian | 1 |  |  |  |  |
|  |  |  | Understanding research results | 1 |  |  |
|  |  |  | Opening dictionary | 1 |  |  |
|  |  |  | Reviewing what we have read | 2 |  |  |
|  |  |  | Summarizing what we have read | 1 |  |  |
|  |  |  | Discussing with friends | 1 |  |  |
| Speaking | Expressing our ideas | 2 | Expressing our ideas | 1 |  |  |
|  |  |  | Talking to a friend in English | 1 | Talking to a friend in English | 1 |
|  |  |  |  |  | Practicing grammar and structure | 1 |
|  |  |  |  |  | Avoiding being lost in another country | 1 |
|  |  |  |  |  | Travelling overseas | $3$ |
|  |  |  |  |  | Passing the immigration (custom) |  |
|  | Making friend | 2 |  |  |  |  |
|  | Expressing our emotional feeling | 2 |  |  |  |  |
|  |  |  | Having an opportunity to speak to expert from oversea |  |  |  |
|  | Participating more actively in the global world | 3 | Participating more actively in the global world | 2 |  |  |
|  |  |  | National welfare |  |  |  |
|  | Interacting with people from different countries and cultures | 3 | Interacting with people from different countries and cultures | 1 | Interacting with people from different countries and cultures | 2 |
|  |  |  |  |  |  |  |
|  | Indonesian and other people around the world |  |  |  |  |  |
|  | Having better performance | 1 |  |  |  |  |

Table 10.5A (Continued)

| Dimension |  |  | Group level |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | High Group | Freq. | Medium Group | Freq. | Low Group | Freq. |
|  | Feeling more confident | 1 | Feeling more confident |  |  |  |
|  | Promoting ideas to someone else | 1 |  |  |  |  |
|  | Having feedback from someone else | 1 |  |  |  |  |
|  | Obtaining solution for the feedback | 1 |  |  |  |  |
|  | Conducting join project | 1 |  |  |  |  |
|  | Involved actively in an international event | 1 |  |  |  |  |
|  | Giving information to people in different countries | 1 | Giving information to people in different countries | 1 |  |  |
|  | Conducting job interview Communicating with people from other countries | 2 1 | Conducting job interview | 2 |  |  |
|  | Having an opportunity to study overseas | 1 | Having an opportunity to study overseas | 2 |  |  |
|  | Working overseas | 1 | Working overseas |  |  |  |
|  |  |  | Looking for a job in multi-national company | 2 |  |  |
|  | Travelling overseas |  |  |  |  |  |
|  | Having a good position in a job | 1 |  |  |  |  |
|  | Having a promotion to a better position | 1 |  |  |  |  |
|  | Being trusted by our boss Participating in an English debate competition | 1 1 |  |  |  |  |
| Writing | Writing application letter | 1 |  |  |  |  |
|  | Improving vocabularies | 1 |  |  |  |  |
|  | Studying overseas | 1 | Studying overseas | 1 |  |  |
|  | Writing proposal in English | 1 | Writing proposal in English | 1 |  |  |
|  | Writing an article in English Gaining an opportunity to publish an article in an international journal | 1 1 |  |  | Writing an article in English | 1 |
|  | Disseminating knowledge | 1 |  |  |  |  |
|  |  |  | Expressing ideas | 1 |  |  |
|  |  |  | Interacting with people through writing | 1 |  |  |
|  |  |  | Establishing social networking | 1 |  |  |
|  |  |  | Making a friend | 1 |  |  |
|  |  |  | Practicing grammar and structure | 1 |  |  |
|  |  |  | Helping a respondent make a job report | 1 | Helping my job for making a report | 1 |
|  |  |  |  |  | Sending an email in English | 1 |

Freq.=Frequency

## Appendix 10.6A: Opportunities or experience as well as advantages students have to talk or write to people who are native speakers of English

Question: What opportunities or experience as well as advantages do you have to talk or write to people who are native speakers of English?
Table 10.6A Opportunities or experience as well as advantages students have to talk or write to people who are native speakers of English

| Group Level |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dimension | Categories | High Group | Freq. | Medium Group | Freq. | Low Group | Freq. |
| Opportunity to learn | Useful | It is useful to talk to native speaker of English | 10 | It is useful to talk to native speaker of English <br> I have non-native speakers from Malaysia, Nigeria and Japan | 5 | I do not have opportunity to talk to native speaker of English | 3 |
| Quality of Instruction |  |  |  |  | 3 | I do not have native speaker of English friends <br> My father has some colleagues from Germany, Singapore, and Sweden. We talk in English between non-native speaker of English | 9 |
|  | Confident | I feel more confident to talk English to a foreigner than to an Indonesian friend. | 1 | We should feel confident | 1 | I feel more confident to talk to native-speaker of English | 1 |
|  | Valuable | I feel more valuable to talk to native speaker of English because the opportunity is very little | 1 |  |  |  |  |
|  | Understanding |  |  | Native speaker of English know what I am talking although I don't speak English fluently and understand | 2 |  |  |
|  | Effort | I try to understand what native speakers are saying | 1 |  |  |  |  |
|  | Arrogant | I am afraid that my friend will say I am arrogant. | 1 |  |  |  |  |
|  | Mumble | I do not feel enjoy talking to nativespeaker of English because when they are talking mumble | 1 |  |  |  |  |
|  | Private English course | I have an opportunity to talk to native speaker of English in a private English course | 1 | I take a private English course | 1 |  |  |
|  | Listening | When I talk to native-speaker of English I listen to what he is talking | 1 |  |  |  |  |
|  | Clarification | When native speaker of English is talking, I am listening and asking some difficult words and new words for clarifying in order that I am able to response |  |  |  |  |  |

Table 10.6A (Continued)

| Academics | I feel useful talking to native speaker of English when they are academic people. They will use academic English | 1 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Different dialect | Indonesian people who talk in English have a different dialect from native speaker of English | 1 |  |  |  |  |
| Native-speaker | It is useful to talk to native speaker of English since we learn English from people who have the language | 1 | It is easier to understand somebody else language if we learn from those who have the language. | 1 |  |  |
| International event | I come to an international event in order to have an opportunity to talk to native speaker of English, i.e. exhibition | 1 |  |  |  |  |
| Tourist destination | I go to Bali for practicing my English | 1 | I go to interesting places such as Bali and Yogyakarta. | 2 |  |  |
|  |  |  | When I meet foreigners in a tourist place, I ask them to take a picture, so I have opportunity to talk in English although it is very little. <br> I went to Bali, I met some foreigners and we talked in English. | 1 1 | I chat to a character while I am playing an on line game | 1 |
| Chatting | I chat with a person from Malaysia who is able to talk in English |  | I have an Indian friend, I chat with her in English | 1 |  |  |
|  |  |  | I chat with a person from Malaysia who is able to talk in English | 1 |  |  |
|  |  |  | I chat through the internet in English | 1 |  |  |
| Community |  |  | I join some programming communities such as Qatar community, Java community, Google community | 1 | I join a mailing list and discuss a topic related to my subject study |  |
| Motivation |  |  | I feel that I am motivated to talk in English | 1 |  |  |
|  |  |  | I feel proud of talking to native speaker of English | 1 |  |  |
| Laboratory |  |  | I work with native speaker of English in the laboratory | 1 |  |  |
| Experience |  |  | I have a new experience for talking to native speaker of English | 1 |  |  |
| On-line game |  |  |  |  | I play international game with him on-line and chat with him |  |
| Website |  |  |  |  | I give comment in game website |  |
|  |  |  |  |  | I like giving comment in music website |  |

## Appendix 10.7A: Experiences and advantages students have in learning English through technology



Table 10.7A (Continued)

| Dimension | Category | High Group Level | Freq. | Medium Group Level | Freq. | Low Group Level | Freq. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Efficiency |  |  |  |  | Learning English through technology is more efficient E-learning is one form of learning English through technology E-learning can be used by every lecturers not only English lecturers | 2 2 |
|  | Community | Learning English by joining community through the internet | 4 |  |  | I learn English through technology by joining Computer Forum | 1 |
|  | Vocabulary |  |  | Looking for the meaning of difficult words using on line dictionary | 1 | I can get new vocabularies by browsing to the internet I use on-line dictionary for looking for the meaning of difficult words | 1 |
|  | Default setting |  |  |  |  | I set the default face book in English | 1 |
|  | Playing game |  |  |  |  | I learn English by playing on-line game | 2 |

Freq.=Frequency

## Appendix 11.1A: Type of English taught

## How is the Course Structured?

Question a: What is type of English taught?
Table 11.1A Type of English taught

| Course | Category | Lecturers' comments | Freq. | Students' comments | Freq. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| English 1c | EGAP | Students were taught one of strands of English for Specific Purposes, in particular, English for General Academic Purposes, namely General English for Science and Technology. An English class contained students from various departments. | 6 | Students learnt English for Specific Purposes, namely English for Academic Purposes | 23 |
|  |  | Teaching practices were conducted at the classroom and at the Language Laboratory The learning of English focused on teaching language, and not teaching content knowledge using English. | 6 6 |  |  |
| English 2c | TOEFL-like | English 2 focused on doing TOEFL-like exercises <br> English 2 focused on preparing students for English Foreign Language Proficiency Test | $6$ $6$ | Students learned TOEFL-like materials | 29 |

## Appendix 11.2A: The skills of the English language taught

Question b: What did the lecturers of English teach to their students?
Table 11.2A The skills of the English Language taught

| Course | Category | Lecturers' comments | Freq. | Students' comments | Freq. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| English 1c |  | Lecturers taught reading, listening, speaking, writing, grammar and structure and vocabulary. Lecturers did not focus on one skill. | 6 | Students had opportunities to learn integrated skills, namely reading, listening, speaking, writing, grammar and structure and vocabulary | 29 |
| English 2c |  | Lecturers taught Listening, Reading, Structure and Written Expression and vocabulary | 6 | Students focused on doing TOEFL-like exercises | 29 |
|  |  | Lecturers did not focus on one skill | 6 | Students learned Listening, Reading, Structure and Written Expression and vocabulary | 29 |
|  |  |  |  | Lecturers did not focus on one skill | 20 |
|  |  |  |  | Lecturers taught the skills of English separately | 29 |

Freq.=Frequency

## Appendix 11.3A: The way English is taught

## Question c: How were the skills of English taught?

Table 11.3A The way English is taught

| Course | Category | Lecturers' comments | Freq. | Students' comments | Freq. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| English 1c |  |  |  |  |  |
| Listening | Teaching Strategies | Lecturers taught Listening strategies for comprehension | 6 |  |  |
|  | Practising Listening | Listening practices were conducted in the Language Laboratory using tape recorder, and not using a headset | 6 | A lecturer always repeated listening many times | 29 |
|  |  | Listening practices were conducted five times at the Language Laboratory | 6 | Students practised listening five times at the Language Laboratory | 29 |
|  |  | Lecturers repeated listening many times in one session until students were familiar and understood with the dialogue | 6 | Students had the opportunity to listen to a presentation in the Language Laboratory | 18 |
|  |  | Listening to a presentation in the Language <br> Laboratory <br> Listening to the lecturer who was talking in English | 6 6 |  |  |
|  |  | Listening to the audio such as CDs and cassettes | 6 |  |  |
|  |  | Listening to the audio visual material such as video and movie in the classroom | 2 |  |  |
| Reading | Reading Activities | Reading activities were divided into three sections, namely before reading, during reading and after reading. | 4 |  |  |
|  | Pre-Reading | Lecturers asked students to guess what the passage was about from the title | 3 | Lecturers asked students to guess what the passage was about from the title | 25 |
|  |  | Lecturers asked students to tell what the title meant in English or in an Indonesian language | 3 |  |  |
|  |  | A lecturer gave a small vocabulary exercises | 1 |  |  |
|  |  | Lecturers asked students to read aloud a paragraph in the class | 6 |  |  |

Table 11.3A (Continued)

|  | During Reading | Lecturers read aloud each paragraph, discussed each paragraph with students, asking students what the difficult words meant and lecturers explained. | 4 | Students read a passage about General English for Science and Technology | 29 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Time allocation for reading was not great because lecturers had to teach grammar and structure during reading, and after reading session. Lecturers had to explain new vocabulary as well. | 6 | Students had the opportunity to read passages from meeting 1 to meeting 5 | 29 |
|  |  | Lecturers did not teach them specifically about reading strategies or reading skills. Lecturers lack of time for teaching reading skills. | 6 |  |  |
|  | Post-reading | Lecturers asked students to express ideas from what they had read in detail. | 3 | Students answered questions available in the book after reading. | 29 |
|  |  | Examining student's comprehension by questioning | 4 | Lecturers asked students to guess some difficult words included in the text. | 29 |
|  |  | Students answered questions available in the book after reading | 6 | Lecturers explained the meaning of difficult words | 29 |
| Grammatical knowledge | Grammar and structure | Teaching grammar and structure through listening and reading | 6 | A lecturer taught grammar and structure while they were reading a text | 20 |
|  |  | Lecturers taught grammar and structure explicitly in a separate meeting several times | 6 | Students were also taught grammar and structure explicitly in several meetings | 29 |
|  |  |  |  | Students were taught grammar and structure in a separate session | 29 |
|  |  | Lecturers checked students' comprehension of grammar and structure by asking students to do some appropriate exercises | 6 | Students did grammar exercises | 29 |
|  |  | The number of grammar and structure test items in the final test was more than the number in the reading test | 6 | A lecturer explained grammar and structure while we were listening | 20 |
| Lexical knowledge | Vocabulary | Teaching vocabulary through listening | 6 | A lecturer taught vocabulary through listening | 20 |
|  |  | Teaching vocabulary through reading | 6 | A lecturer taught vocabulary through reading | 20 |
|  |  | Vocabulary was tested at the final test and the number of vocabulary items was more than the number of reading items. | 6 |  |  |

Table 11.3A (Continued)

| Writing | Practice | There is no enough time for composing a real <br> writing <br> Answering questions for comprehending reading <br> passage by writing <br> Creating wall magazine <br> Free choice writing | 6 | There was very little opportunity to practise writing in <br> English <br> There was a lack of time to write a composition |
| :--- | :--- | :--- | :--- | :--- |
| Speaking | Practising <br> Speaking | Presenting orally the report of extensive reading <br> Presenting topic of interest to a group <br> Providing a student with an opportunity to be a <br> moderator | 1 |  |

Table 11.3A (Continued)

| English 2c | Category | Lecturers' comments | Freq. | Students' comments | Freq. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Listening | Teaching Strategies | Teaching Listening strategies for comprehension | 6 | A lecturer taught listening strategies | 29 |
|  | Practising strategies | Lecturers practised listening strategies in order that students realized when and how these strategies were used | 6 | Students practised listening strategies | 15 |
|  | Practising Listening | Lecturers practiced listening several times with their students in a separate session from reading | 6 | A lecturer repeated listening many times in one session | 29 |
|  |  | Lecturers repeated listening many times in one session until students understood what the speakers said | 6 | Students practised doing exercises everyday | 20 |
|  | Doing exercises | Lecturers asked students to do some exercises and discussed the answer | 6 | Students and lecturers discussed the correct answer | 29 |
|  | Resource | Pointing to electronic resources that students could practice listening independently | 4 |  |  |
| Reading | Teaching | Lecturers taught reading strategies | 6 | Students learned reading strategies | 10 |
|  | Practising Strategies | Lecturers practised strategies by asking students to do some exercises | 6 | Students did some exercises for practising strategies | 10 |
|  | Doing exercises | Lecturers asked students to practise doing some exercises and discussed the correct answer | 6 | Students in every meeting for reading practised doing exercises and discussed the correct answer | 29 |
|  |  | Lecturers taught Reading in a separate session from Listening | 6 | Teaching reading was conducted in a separate session from another skill | 27 |
|  |  |  |  | Students liked reading more than listening | 29 |
|  |  |  |  | Reading was much easier than listening because students read a text | 29 |
|  |  |  |  | Students could read a text again and again | 25 |
|  | Extensive reading |  |  | Students read articles in English for their project | 28 |
|  | Resources | Lecturers pointed to some electronic resources | 4 | Students read textbooks for their project | 25 |

Freq.= Frequency
(continued)

Table 11.3A (Continued)

| Structure and Written Expression |  | Lecturers taught and explained the patterns of grammar explicitly in grammar session | 6 | Students learned grammar and structure in a separate session | 29 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Lecturers sometimes taught grammar and structure through reading comprehension session | 6 | Students got confused with grammar and structure because there were a large number of patterns in grammar | 28 |
|  |  | Lecturers sometimes taught grammar and structure through listening comprehension session | 6 | Students practised grammar and structure exercises but they got confused | 29 |
|  |  | Lecturers asked students to practise grammar exercises | 6 | Lecturers discussed and explained the correct answer | 10 |
| Lexical knowledge | Vocabularies | Lecturers explained vocabulary through listening | 6 | Students learned vocabulary through listening | 20 |
|  |  | Lecturers explained vocabulary through reading | 6 | Students learned vocabulary through reading | 29 |

## Appendix 12.1A: Outer model analysis of model replication with 1978 cases

Table 12.1A Outer model analysis of model replication with 1978 cases

| Dependent Variable | Rank-Scaled Score 1 to 4 ( $\mathrm{n}=1978$ ) |  |  |  | Rasch-Scaled Score ( $\mathrm{n}=1978$ ) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Independent W | L | C | R | T | W | L | C | R | T |
| GENDER Unity Exogen 1 MVs |  |  |  |  | GENDER Unity Exogen 1 MVs |  |  |  |  |
| Sex 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| AGE_BEGIN Unity Exogen 1 MVs |  |  |  |  | AGE_BEGIN Unity Exogen 1 MVs |  |  |  |  |
| Time_Begin 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| AGE_END Unity Exogen 1 MVs |  |  |  |  | AGE_END Unity Exogen 1 MVs |  |  |  |  |
| Time_End 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| SES Outward Exogen 3 MVs |  |  |  |  | SES Outward Exogen 3 MVs |  |  |  |  |
| Focc -0.27 | -0.27 | 0.08 | 0.00 | 0.11 | -0.27 | -0.28 | 0.08 | 0.00 | 0.11 |
| Mocc -0.21 | -0.23 | 0.05 | 0.00 | 0.11 | -0.22 | -0.24 | 0.06 | 0.00 | 0.11 |
| Psal 0.95 | 0.92 | 0.85 | 0.00 | 0.01 | 0.95 | 0.92 | 0.84 | 0.00 | 0.00 |
| PRIOR Outward Endogen 3 MVs |  |  |  |  | PRIOR Outward Endogen 3 MVs |  |  |  |  |
| Physic 0.17 | 0.41 | 0.17 | 0.01 | 0.09 | 0.17 | 0.41 | 0.17 | 0.01 | 0.09 |
| Math 0.52 | 0.87 | 0.76 | 0.03 | 0.35 | 0.52 | 0.87 | 0.76 | 0.03 | 0.35 |
| English 0.56 | 0.87 | 0.75 | 0.03 | 0.30 | 0.56 | 0.87 | 0.75 | 0.03 | 0.30 |
| FACULTY Unity Endogen 1 MVs |  |  |  |  | FACULTY UnityEndogen 1 MVs |  |  |  |  |
| Faculty 1.00 | 1.00 | 1.00 | 0.27 | 0.00 | 1.00 | 1.00 | 1.00 | 0.03 | 0.00 |
| SELECT Unity Endogen 1 MVs |  |  |  |  | SELECT Unity Endogen 1 MVs |  |  |  |  |
| Selection 1.00 | 1.00 | 1.00 | 0.27 | 0.00 | 1.00 | 1.00 | 1.00 | 0.27 | 0.00 |
| ENGLSH_1 Unity Endogen 1 MVs |  |  |  |  | ENGLSH_1 Unity Endogen 1 MVs |  |  |  |  |
| Score Eng_1 1.00 | 1.00 | 1.00 | 0.16 | 0.00 | 1.00 | 1.00 | 1.00 | 0.16 | 0.00 |
| YEAR Unity Exogen 1 MVs |  |  |  |  | YEAR Unity Exogen 1 MVs |  |  |  |  |
| Year 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| BAHASA Unity Endogen 1 MVs |  |  |  |  | BAHASA Unity Endogen 1 MVs |  |  |  |  |
| Score BAH 1.00 | 1.00 | 1.00 | 0.07 | 0.00 | 1.00 | 1.00 | 1.00 | 0.07 | 0.00 |
| SEMESTER Unity Exogen 1 MVs |  |  |  |  | SEMESTER Unity Exogen 1 MVs |  |  |  |  |
| Semes 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 |
| GPA Unity Endogen 1 MVs |  |  |  |  | GPA | Unity | Endogen | 1 MVs |  |
| Score GPA $\quad 1.00$ | 1.00 | 1.00 | 0.32 | 0.00 | 1.00 | 1.00 | 1.00 | 0.32 | 0.00 |

W=Weight; L=Loading; C=Communality; R=Redundancy; T=Tolerance

## Appendix 12.2A: Inner model analysis of model replication with 1978 cases

Table 12.2A Inner model analysis of model replication with 1978 cases


Beta=Standardized regression coefficients ( $\beta$ )
SE= Standard error for Beta

## Appendix 15.1A: Model Specification

## Model Specification

This model specification can be written as:

$$
\begin{equation*}
\eta=\mathrm{B} \eta+\Gamma \xi+\zeta \tag{Equation 2.1}
\end{equation*}
$$

where $\mathrm{B} \eta$ is the coefficient matrix for the endogenous variables, $\Gamma \xi$ is the coefficient matrix for the exogenous variables and $\zeta$ is the matrix of the residual error terms (Byrne, 1998; Jöreskög \& Sörbom, 2004).

## Assessing Model Fit

Before discussing in detail the assessment of model fit with respect to the specific model examined, it is necessary to consider some general issues arising in assessing model fit. There has been a long debate among the SEM researchers about how best to assess model fit. This is because they "do not always agree on the best ways to assess model fit" (Bollen and Long, 1993, p. 6). Nevertheless, Bollen and Long (1993) pointed out five areas of general agreement.

First, the most important consideration in assessing whether a model fits is not whether the model fit indices support the model but whether the model is supported by substantive theory. Fan, Thomson, and Wang (1999) argued that assessing model fit in SEM analysis was not easy since there were a great number of problems and dilemmas. Fan et al (1999) added that the difficulties included the task of comparing fit indices across sample sizes, estimation methods and model specifications.

Second, Bollen and Long (1993, p. 6) argued "that the chi-squared test statistic should not be the sole basis for determining model fit". The Chi-square ( $\chi^{2}$ ) statistic tested the hypothesis that there was no difference between the matrix of implied variances and covariances $(\Sigma)$ and the matrix of sample variances and covariances (S). Thus, it was not a test of exact fit and whether the model exactly fitted the data. Moreover, the use of $\chi^{2}$ was sensitive to sample size where the sample size was greater than 200 (Hair, Anderson, Tatham, and Black, 1995). Since the expression chi-square involved in a $\chi^{2}$ distribution implied that as N increased, $\chi^{2}$ increased and the larger the $\chi^{2}$ value, the more likely the specified model was rejected. Thus, employment of a large sample gave rise to problems in the use of the chi-square test. Gulliksen and Tukey (1958, pp. 95-96) noted that "...if the sample is large, the $\chi^{2}$ test will show that the data are significantly different from those expected from a given
theory even though the difference may be so very slight as to be negligible or unimportant on other criteria". For this reason, researchers who worked with large samples were in danger of committing a Type I error that led to the rejection of an acceptable model when it was, in fact, sound or adequate.
Third, Bollen and Long (1993, p. 6) stated that "no single measure of overall fit should be relied on exclusively". It has been argued, however, that researchers too readily ignored the significance of a failed chi-squared test of "exact fit" and too readily accepted other measures of fit that supported "close fit" without first trying to provide reasons as to why a chi-squared test of exact fit was not achieved. Fourth, Bollen and Long (1993, p. 6) also stated "that we should not ignore the fit of the components of a model". Fifth, Bollen and Long (1993, p. 6) argued that "it is better to consider several alternative models than to examine only a single model".
Many alternative indices have been developed for addressing these issues about the inadequate nature of the chi-squared statistic for assessing model fit (Thomson and Daniel, 1996). These suggestions included indices related to the absolute fit of the model, indices related to incremental or comparative fit, as well as indices of model parsimony (Schumacker and Lomax, 1996). The goodness-of-fit index (GFI) (Jöreskög and Sörbom, 1988), the adjusted goodness-of-fit index (AGFI) (Jöreskög and Sörbom, 1988) and the root mean square residual (RMSR) (Jöreskög and Sörbom, 1989b) including its standardised version (SRMR) were some of the indices developed to measure the absolute fit of a model.
The incremental fit index (IFI) (Bollen, 1989), the Tucker-Lewis index (TLI) (Tucker and Lewis, 1973), the normed fit index (NFI) (Bentler and Bonnett, 1980) and the comparative fit index (CFI) (Bentler, 1990) were some of the indices that were advanced with respect to the incremental or comparative fit indices for use during the process of analysis. Some further indices that were related to model simplicity, parsimony, or economical use of variables included the parsimony ratio (PRATIO) (James, Mulaik and Brett, 1982), the parsimonious goodness-of-fit index (PGFI) (Mulaik et al, 1989), the adjusted goodness-of-fit index (AGFI) (Jöreskög and Sörbom, 1998), and the chi-square to degrees of freedom ratio that was also referred to as the normed chi-square (Jöreskög, 1969). The indices mentioned above represent only a small number of the many suggestions advanced for assessing model fit.

Fan et al. (1999) argued that researchers had devised many alternative indices based on different rationales, however a large number of them in a practical sense were highly similar. Consequently, it has been argued that it was sound practice to report model fit using a selection of several indices since there was not a single fit index that had been found to meet all requirements (Hoyle and Panter, 1995).

One index that had been generally regarded as the most useful for assessing the fit of the models to the data was the root mean square error of approximation (RMSEA). Byrne (2001) pointed out that a desirable value for RMSEA was a value that was less than 0.07. Fan et al. (1999) added that RMSEA predominantly measured model specification, because, it was relatively independent of sample size and the estimation method employed.

With this brief overview of 'model fit', it is now possible to re-examine the model of English Language Proficiency advanced in Chapter 15. The modification indices presented by the AMOS computer program are used to identify a more adequate model, or possibly the best available model that can be constructed using a confirmatory analysis rather than the exploratory analysis that is provided by PLSPATH analyses.

## Modification Indices

AMOS analysis routinely generates modification indices that consist of three parts, namely, covariances, variances and regression weights. However, as a practical consideration it is important to note that the AMOS output is only able to provide modification indices if there are no missing data in the dataset. Thus, if there are missing data in the dataset, the AMOS output does not produce modification indices. The modification index is an estimate of the amount by which the discrepancy function would decrease if changes were made. Each time AMOS displays modification indices for parameters, it also displays expected parameter changes for path coefficients or covariances. A positive parameter change indicates an increase in the magnitude of the estimate.
AMOS computes not only modification indices for parameters that are explicitly constrained but also for parameters that are implicitly assumed to be zero. However, AMOS does not compute modification indices for non-existent paths that:
(a) would convert an exogenous variable into an endogenous variable;
(b) would create an indirect path from a variable to itself; and
(c) would convert a recursive model into a non-recursive model.

Byrne (2001) argued that using a modification index to re-specify a model might work well. However, a modification should only be considered if there were sound theoretical grounds and adding parameters made substantive sense. This was because the modification indices generated by the AMOS output did not always make sound theoretical sense. For example, in causal modelling, a first or earlier event caused a second or later event. However, the modification indices in the AMOS output sometimes implied that a second or a later event caused a first or earlier event. This did not make sense and could not be considered. Moreover, it needed to be borne in mind that the researcher did not need to free up a path to be estimated just because it had the largest modification index. Furthermore, selecting modification indices that made sense with respect to theory was essential.

All the parameters estimated needed to have a strong rationale based either on theory, the researcher's logic or past research. Each time a model was modified, the researcher was implicitly changing the model's meaning in some fundamental way. In some cases, re-specifying a model might alter substantially the meaning of the model, and in other instances model re-specification was able to foreshadow a valuable shift in the model's meaning from a theoretical standpoint. Thus in deriving the final specified and identified model of English Language Proficiency and in contributing meaningful information to the body of knowledge, theoretical sense was necessarily considered extremely important.
Many attempts were required to select carefully the final model that could be argued to be the best fitting model. Many trial and error runs were needed in order to respecify a model until the final goodness-of-fit statistics were obtained.

The section that follows discusses the use of the modification indices to respecify a model. However, this begins by assessing the fit of each construct in the model and its manifest variates individually to identify whether or not the manifest variates are weak.

## Improving Model Fit

## Assessing the Squared Multiple Correlation ( $\mathbf{R}^{\mathbf{2}}$ )

It is common to find that a model is a poor fitting model due to the complexity of structural equation modelling. The results of the initial analyses record the effects of
the manifest (observed) variates of the constructs that measure the three latent variables, namely, PRETEST, NOSTIC and ELPT through the use of the Squared Multiple Correlations ( $\mathrm{R}^{2}$ ). None of the variates has a low multiple $\mathrm{R}^{2}$ (less than 0.20 ) and none of the variates is particularly weak. If the variate has an $\mathrm{R}^{2}$ that is less than 0.20 , it can be removed from the analysis as this is an indication of very high levels of error.

## The Use of Modification Indices for Model Re-specification

The results of the original analysis show that through the use of modification indices possible covariances and regression weights can be changed or introduced into a respecified model that result in substantial increases in the model fit chi-square test statistic. In the original model, it can be seen that each of the three language proficiency instruments, namely, PRETEST, NOSTIC, and ELPT have three components, namely Listen, Read, and Write that are reflectors or indicators that are obtained on three different occasions. Since the data are derived from the same research participants, it is meaningful to conclude that these variates may share errors in their effects on PRETEST, NOSTIC, and ELPT that are not captured by the original model. The fit of this model can be improved through the correlation of error terms. Gerbing and Anderson (1984), however, considered that this practice was generally frowned upon as it implied that there was some other influence that was not specified in the model that was causing the covariation.

## Appendix 15.2A: Fit Indices

Model Chi-Square ( $\boldsymbol{\chi}^{2}$ )
The AMOS computer analysis output shows that the results of this confirmatory analysis in this study indicate a model that has excellent fit to the data. An examination of Table 15.5 (presented in Chapter 15) shows that the final value of chi-square $\left(\chi^{2}\right)$ is non-significant ( $\chi^{2}=64.775$ ). Hu and Bentler ( 1999, p. 2) stated that the Chi-Square value ( $\chi^{2}$ ) was identified as a fit statistic and assessed "the magnitude of discrepancy between the sample and fitted covariances matrices". Barrett (2007) noted that since a good fitting model provided an insignificant result at a 0.05 threshold, the terms a 'badness of fit' (Kline, 2005) or a 'lack of fit' was frequently identified by the chi-square statistic. The chi-square is represented as the so-called 'Discrepancy' term in the AMOS output. This was the 'discrepancy' that existed between the unrestricted saturated covariance matrix and the covariance matrix produced by the model. Byrne (2001) explained that this 'discrepancy' could be represented by the likelihood ratio or by a chi-square statistic. Hair et al (1995) argued that given that the chi-square was sensitive to large sample size, which meant that the chi-square almost always rejected the model involving a large sample (Bentler and Bonnet, 1980; Jöreskög and Sörbom, 1993). On the other hand, the chisquare lacked power when small samples were used. Consequently, researchers were advised to have sought an alternative index such as an adjusted chi-square or normed chi-square since it was likely to be more informative (Jöreskög, 1969). Jöreskög (1969) stated that the normed chi-square was best expressed by the ratio of chisquare value divided by the number of degrees of freedom involved ( $\left.\chi^{2} / \mathrm{df}\right)$.

In this current analysis a large number of improvements occur when the model is modified. The chi-square value improves from 312.165 for the original model to 64.775 for the final model. In addition it has a smaller number of the degrees of freedom. Table 15.5 indicates that the normed chi-square does have a smaller value (4.318).

Jöreskög (1969) stated that in a so-called 'true model' the approximate normed chisquare was 1.0. While a ratio less than one was said to have over fit, Hair et al, (1995) suggested a ratio under 2.0 was required for a well-fitting model, while Kline (1998) suggested that a value under 3.0 was adequate. Schumacker and Lomax (1996) argued that a model with a ratio greater than 5.0 was identified as a badly
fitting model. However, although there was no consensus associating with an acceptable value for the normed chi-square, other experts had put forward recommendations ranging from as high as 5.0 (Wheaton et al, 1977) to as low as 2.0 (Tabachnick and Fidell, 2007). Schumacker and Lomax (1996) argued that like many others, the normed chi-square measure was greatly influenced by sample size.

The results of the analysis recorded in Table 15.5 indicate that the normed chi-square ( $\chi^{2} / \mathrm{df}$ ) value is in the expected range (4.318), and the model can be identifies as a good fitting model.

## Root Mean-square Residual (RMR) and Standardised Root Mean-square Residual (RMSR)

Another measure for assessing model fit is the root mean-square residual (RMR). RMR is a measure of the average difference (residual) between $\Sigma$ and S for the elements of the variance-covariance matrix. However, the size of the RMR could be affected significantly by the order of magnitude of the scales of the observed variables. If an item (a question) in a questionnaire had a different scale, for example some items were scaled on a range from $1-5$ while others ranged from $1-7$, the RMR became difficult to interpret (Kline, 2005). Moreover, the RMR could be very large. Hu and Bentler (1999) suggested that the Standardised RMR (SRMR) should be assessed rather than the raw RMR. Values for the SRMR ranged from 0 to 1.0 with well-fitting models the SRMR value should be less than 0.06 (Byrne, 1998; Diamantopoulos and Siguaw, 2000). However, Kline (1998) noted that a favourable or adequate SRMR value was 0.10 or less, while Hu and Bentler (1999) noted that values as high as 0.08 were considered acceptable. Unfortunately, the AMOS output did not report the value of SRMR directly and the value had to be calculated separately using Plugin tab and Calculate Estimate in the AMOS Graphics computer program.

Table 15.5 records the value of SRMR is 0.022 , and consequently shows that the model has a high degree of fit.

## Goodness-of-Fit Index (GFI) and the Adjusted Goodness-of-Fit Index (AGFI)

The goodness-of-fit index (GFI) and the adjusted goodness-of-fit index (AGFI) are another two measures provided by AMOS Graphics. Kline (1998) pointed out that
these indices were originally associated with the LISREL computer program. The GFI was basically the squared multiple correlation ( $\mathrm{R}^{2}$ ) and Byrne (2001) argued that this index measured the relative amount of variance or covariance in the sample data that was jointly explained by the variance or covariance implied by the model.

Hair et al (1995) stated that the AGFI was the GFI adjusted by the ratio of the degrees of freedom for the proposed model to the degrees of freedom for the null model. Theoretically, Kline (1998) reported that the values for the GFI and AGFI ranged from 0 (poor fit) to 1 (perfect fit). However, the value of GFI could fall outside of this range. Moreover, she added that an over-fitted model or a justidentified model with near perfect fit could produce a GFI that was greater than one. Jöreskög and Sörbom (1996) and Kline (1998) noted that a model with very small samples could result in a negative GFI value and the model would be considered as an extremely poor fitting model.

Furthermore, an observation made on the perfectly fitting models that were examined by Fan et al (1999) stated that if a researcher employed samples under 500, a strong downward bias occurred in the values of GFI and AGFI. However, Fan et al (1999) added that this bias was more informative in models tested with less misspecification. Thus, GFI and AGFI could be shown to be sample size dependent (Fan et al, 1999; Hu et al 1995). Higher values indicated better fit. However some researchers recommended values close to 0.90 since there was no threshold established for acceptability (Hair et al, 1995; Schumacker and Lomax, 1996).

Table 15.5 records a GFI and an AGFI. These AGI and AGFI values are greater than 0.95 , and suggest that the model is a very good fitting model.

## Parsimony Adjusted Goodness-of-Fit Index (PGFI)

One measure of fit which considers model complexity is the parsimony adjusted goodness-of-fit index (PGFI). While AGFI made adjustments relative to the null model, PGFI made adjustments by considering the number of parameters being estimated (Hair et al, 1995). They also argued that values for the PGFI ranged from 0 to 1 with a higher value indicating greater parsimony or simplicity. However, Byrne (2001) noted that typically parsimony-based indexes produced lower values than the threshold levels generally accepted for other fit indices. For example, Mulaik et al. (1989) reported that models with non-significant chi-square values and GFIs that
were often close to 0.9 where a PGFI of 0.5 was expected. However, no threshold levels had been recommended for this index, consequently it made them very difficult to interpret. Thus the value of PGFI of 0.331 , shown in Table 15.5 indicates that the model remains less than a desired level of parsimony, or economical employment of variables.

## Parsimony Ratio (PRATIO)

A simple measure of parsimony, or simplicity, the 'parsimony ratio,' (PRATIO) was proposed by James, Mulaik and Brett, 1982 and Mulaik, et al., 1989) which was simply the degree of freedom for the model being evaluated divided by the number of degrees of freedom for the independence model. Values approaching unity (1) indicated parsimony; values approaching zero (0) indicated lack of parsimony or economical use of variables.

Table 15.5 records that the model indicates an adequate level of parsimony with the value of 0.583 approaching 1 .

## Incremental Fit Index

Fan et al (1999) proposed the Incremental Fit Index (IFI) that measured how much better the fitted model was compared to baseline models or the null or independence model (hence it was sometimes called a Comparative Fit Index). This index was also named a Relative Fit Index (McDonald and Ho, 2002) and in some studies, this has also been known as Bollen's 'Delta 2'. Similar to the GFI and AGFI, and to a lesser degree the IFI, it was shown by Fan et al (1999) to be influenced by sample size. Fan et al (1999) also showed that the IFI had been found to be strongly influenced by the estimation procedure used with a downward bias occurring with maximum likelihood (ML) but not with generalized least squares (GLS).

These indices typically lay between zero (0) and one (1), where zero indicated that the specified model was no better than the independence model and a value of one (1) indicated that the specified model was a perfect fit. However, some value of incremental fit indices that were greater than one (1) could be obtained.

Because the value of the IFI is 0.992 as is shown in Table 15.5, the model is considered to be a good fitting model.

## Tucker-Lewis Index (TLI)

The Tucker-Lewis Index (TLI) that was proposed by Tucker and Lewis (1973) ${ }^{19}$ was one of the incremental fit indices that could exceed a value of 1 . If this were recorded it would indicate that the model was probably over-specified (i.e. too many parameters had been freed for estimation) indicating that the model was possibly more complex than necessary. An acceptable level was that TLI should be greater or equal to 0.95 . Values greater than 1.0 indicated lack of parsimony.

Table 15.5 shows that the value of TLI is 0.981 indicating that the model is parsimonious.

The Comparative Fit Index (CFI), proposed by Bentler (1990) has been considered similar to the Tucker-lewis Index (TLI) except that it was constrained to fall between 0 and 1 . An acceptable level was that CFI should be greater than 0.95 .

Table 15.5 shows that the value of CFI is 0.992 suggesting that the model is a very good fitting model.

## Root Mean Square Error of Approximation (RMSEA)

Another very important measure for assessing model fit is the Root Mean-Square Error of Approximation (RMSEA). RMSEA is relatively independent of both sample size and the estimation procedure.

Hair et al (1995) argued that the RMR considered the amount of error within a sample, while the RMSEA took into account the error within the whole population and was expressed relative to the number of degrees of freedom. Consequently, Byrne (2001) pointed out that this made RMSEA sensitive to the number of parameters estimated in the model and its ultimate complexity.

Browne and Cudeck (1993, pp 137-138) also asked the question that "How well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available?" Byrne (2001) suggested that the values of RMSEA of less than 0.05 were considered to indicate good fit, values as

[^16]high as 0.08 showed reasonable fit, whereas values between $0.08-0.10$ indicated mediocre fit. Moreover, Byrne (2001) added that RMSEA values higher than 0.10 were considered to indicate poor fit. However, Hu and Bentler (1999) argued that values under 0.06 represented good fit.

Thus by considering any of these criteria, the RMSEA of 0.041 shown in Table 13.5 represents very good fit. Confidence intervals for RMSEA at the 90 per cent level are also reported by AMOS. Whereas the lower bound for this confidence interval is a RMSEA of 0.031 , the upper bound value is 0.051 . This narrow confidence range indicates good precision of the RMSEA in this study to reflect the fit of the final proposed model. In addition, a p value as a test of close fit is produced with the RMSEA. Jöreskög (1996) had suggested that a p value greater than 0.05 was the recommended outcome for this test. Some researchers such as Kline (1998) and Schumacker and Lomax (1996) argued that because there was no straightforward answer to what constituted good fit in SEM, general consensus was that good fit must be accompanied by highly meaningful model-data correspondence.
Since there are many fit indices available to the researcher, this raises wide disparity in agreement on which indices are reported as well as what cut-offs values for various indices are actually estimated (Hooper, Coughlan, and Mullen, 2008). Yuan (2005) argued that this disparity in agreement was necessary, particularly when researchers were assessing whether or not the model fitted the data since this was one of the most important steps in structural equation modelling. Barrett (2007) reported that in recent years there had been serious scrutiny of the area of fit indices with some authors calling for its complete abolishment. Moreover, Kenny and McCoach (2003) and Marsh et al. (2004) pointed out that the shortcomings of having stringent thresholds still became an essential debate in the area of structural equation modelling.

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[^0]:    ${ }^{1}$ In the discussion that follows each popular term is followed in parentheses by the formal name to the ability assigned by Carroll. Each of the abilities is involved to different degrees in the performance of the different assigned tasks and classes of tasks.

[^1]:    ${ }^{2}$ The acronyms employed in this study for variables are indicated here through the use of capital letters in bold type, while manifest variates are indicated by lower case letters in bold type.

[^2]:    ${ }^{3}$ Indonesian terms for the University entry by national selection
    ${ }^{4}$ Indonesian terms for the University entry by local selection (invitation)

[^3]:    ${ }^{5}$ Equating is "a statistical process that is used to adjust scores on test forms so that scores on the forms can be used interchangeably. Equating adjusts for differences in difficulty among forms that are constructed to be similar in difficulty and content" (Kolen and Brennan, 1995, p. 2).
    ${ }^{6}$ English 1t: English 1 test; English 2t: English 2 test

[^4]:    ${ }^{7}$ English 1c: English 1 course; English 2c: English 2 course

[^5]:    ${ }^{8}$ Where specific variables in this study are being considered they are identified by beginning with a capital letter or through the use of an acronym, such as, Father's Occupation (FOCC).

[^6]:    ${ }^{9}$ Categories are printed in bold

[^7]:    ${ }^{10}$ TOEFL is a test that is prepared for commercial purposes by the Educational Testing Services in the United States

[^8]:    ${ }^{11}$ In the sections that follow in this chapter the acronyms that are used in the computer analyses and in the path diagrams are recorded where appropriate in bold and capital type to assist in the examination of the results and findings of the path analyses and the path models.

[^9]:    ${ }^{12}$ The $\beta$ coefficients are presented with the value and with its jackknife standard error recorded in parentheses.

[^10]:    ${ }^{\mathrm{a}}$ Indirect effects in bold type are discussed in the text.

[^11]:    ${ }^{13}$ English 1c
    ${ }^{14}$ English 2c

[^12]:    ${ }^{15}$ See 'Measures of Variation' in Keeves (1997)

[^13]:    ${ }^{16}$ Intraclass correlation coefficient. It should be noted that the product moment correlation (r) is a between student relationship and does not take into account the differences between the means of the groups, while rho does take into account the differences between the means of the groups of data if it is calculated from a one-way analysis of variance. (Keeves, 1997, pp. 589-591)

[^14]:    ${ }^{17}$ Income Group of the Parent in hundreds of thousand rupoah

[^15]:    ${ }^{18}$ Indonesian currency 'Rupiah'

[^16]:    ${ }^{19}$ Bentler and Bonnet (1980) proposed a Non-Normed Fit Index (NNFI) which was mathematically equivalent to the Tucker-Lewis Index. Bollen (1989) referred to this index as $\rho_{2}$.

