ASSESSMENT FOR LEARNING:

A SCHOOL- BASED INTERVENTION STUDY IN SINGAPORE

Thesis submitted by

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Abstract

In Singapore schools, assessment of learning practices have been dominant in shaping everyday classroom instruction. However, in the international literature, increasing emphasis has been placed on the role of assessment for learning (AfL) in effective teaching and learning. One reason for this is that AfL is claimed to enhance teachers' identification of and response to students' learning needs. Also, AfL has been argued to enhance student engagement and self-directed learning. The present research involved the introduction and implementation of some core AfL strategies such as peer feedback, student self-reflections, goal setting, use of performance standards, and teacher written feedback in one school context in Singapore as an intervention. As a result of the intervention, evidence of change and impact on (a) teachers' behaviours, attitudes and beliefs and (b) students' behaviours, attitudes and beliefs were examined. Positive changes included students taking more ownership and responsibility for their learning as they began to understand the language of assessment and learned what they 'know and do not know' and taking actions to address their learning needs. Possible links between AfL experiences and summative examination performance were included in the research. Finally, the research and its results revealed some of the possible barriers to a greater use of assessment for learning in Singapore, which helped formulate recommendations for sustaining AfL practices.

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.

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Rozi Binte Rahmat
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Acknowledgement

AfL	Assessment for Learning
ANOVA	Analysis of Variance
CHC	Confucius-Heritage Culture
CT1	Common Test 1
CT2	Common Test 2
Fairmont	Fairmont Secondary School
GCE O' level	General Certificate of Education Ordinary Level
HHOD	Humanities Head of Department
NIE	National Institute of Education
OECD	Organisation of Economic Cooperation and Development
PLC	Professional Learning Community

Chapter 1 Introduction

1.1 Scope of the chapter

This introductory chapter provides an introduction to, and an overview of, the research inquiry for this thesis. Being the central concept of the study, Assessment for Learning (AfL) is defined, followed by an outline of the context of the research. Subsequently, the background to the issue, the purpose, objectives and significance of the study, and the research questions are introduced. This chapter then concludes with an overall outline of the thesis.

1.2 Overview

'Assessment for learning: A school-based intervention study in Singapore' is a short-term longitudinal examination of four Social Studies teachers and their students as they are introduced to, and then use, AfL strategies as part of their teaching and learning practices at a Secondary School (Fairmont) in Singapore. AfL is first and foremost assessment that occurs during the learning process and is designed to contribute to teaching and learning. Through feedback during the learning process, both teachers and students are informed about how learning is progressing, where learning should go next, and how best to move the learning forward. The emphasis in AfL presented in this research is on the self-regulated learning of students and peer feedback, together with quality written feedback from teachers. The thesis makes an important contribution to the literature on AfL in its investigation of the implementation and impact of AfL strategies in the context of a school and an education system where the current emphasis is on summative teaching and learning practices.

1.3 Background

At present, the Singapore education system places great emphasis on examination results together with an approach to assessment that focuses upon summative assessment (also known as the assessment of learning). In contrast, in recent decades there has been an increasing emphasis in the international literature on formative assessment (also known as AfL) as a means of increasing achievement through the enhancement of teaching and learning.

It has been widely suggested in the literature that AfL practices, such as the setting of learning goals, reflective writing, peer/ written feedback and self-regulated learning, improve student learning outcomes (Black & Wiliam, 1998b; Black & Wiliam, 2009; Brookhart, 2009; Gielen, Dochy, Onghena, Struyven, & Smeets, 2011; Hattie & Timperley, 2007; Heritage, 2010b; Nicol, 2010; Sadler, 1989; Shute, 2008; Wiliam, 2011b). In the present study, AfL is treated as a continual assessment process in which both the teacher and the student (working as a team) gather evidence of learning to determine the student's learning progress. Information about the student's learning progress can then be used as feed forward to change either the teacher's classroom instruction or the student's learning strategies so that standards are better able to be met while the learning occurs. In order to assist both the teacher and the student to assess learning progress, a clear vision of the learning goals is set at the beginning of each lesson and, based on descriptive feedback from the teacher and peers (including the self), decisions are made about what the students know and do not know. With the assistance of the teacher (through quality written feedback) and peers (through peer feedback), the student can take responsibility to establish what s/he needs to do in order to achieve the learning goals or performance standards.

In the present study, the use of AfL strategies aims to improve the students' learning experience by providing them with strategies to help them to 'know what they know and do not know' in relation to the performance standards. This involves students reviewing their learning processes and taking action to improve their learning based on the feedback given by their teachers or peers. According to Bennett (2009), formative assessment is more than a process, instead being the "thoughtful integration of process and purposefully designed methodology" (p. 5). Hence, in this research, attempts are made to ensure that the teachers become actively involved in reviewing and changing their classroom instruction to cater to the students' learning needs. This was achieved through the teachers actively monitoring and assessing the students' learning progress during peer feedback activities and reading the students' reflective writings.

Research has shown that when the mode of lesson delivery is teacher-talk, students have a tendency to become passive in their learning. Thus, changing

teaching and learning instruction from being teacher-centred to a more student-centred model, through the use of AfL strategies, helps students to become more active self-regulated learners who are co-creators of knowledge and who are focused on how to come to an answer instead of just knowing what the right answer is. In order to assist the students to take ownership of their learning, they must be trained/ coached in how to monitor, evaluate and reflect on their learning, which are important elements for AfL to be successful in improving teaching and learning. Regrettably, in much of the research, the teachers are provided with AfL learning workshops to prepare them for the implementation of AfL, while the students are often neglected when it comes to the provision of training and emotional support (Cheung & Wong, (2012); McDonald & Boud, (2003); Boud & Molloy, (2012); Topping, (2009)).

According to Black et al. (2005) and Stiggins (2005b), students gain much value from AfL practices because the teachers are focused on the students' learning needs in order to maximise their actual learning. Through the feedback process, students are also informed of their learning progress in relation to the performance standards more often and more accurately while the learning is taking place. As a result, the students can make changes to their learning strategies in an ongoing manner (Stiggins, 2002).

Despite evidence about the possible positive impact of AfL practices on student learning, assessment of learning practice is still the preferred choice of assessment practice at Fairmont, where grades are used as indicators to determine the students' learning success and promotion to the next educational level. This "narrow and naive view of learning" (Harlen, 2007, p. 2) has been criticised as causing the excessive use of norm-referenced (instead of criterion-referenced) assessment. As a result, students tend to compete against one another which can affect their self-esteem and their levels of social interaction as they work in isolation to outdo the other students (Johnson & Johnson, 2010; Johnson & Johnson, 1994; White & Lehman, 2005). In view of the competitive learning environment, AfL strategies, such as peer feedback which encourages collaborative learning, are considered by the teachers at Fairmont to be unsuitable for enhancing teaching and learning. As well, in an East Asian Confucius Heritage Culture (CHC) classroom, students tend to prefer feedback from

the teachers as they are seen to be the knowledge authority in the class (Bryant & Carless, 2010). As a result, the teacher's mode of teaching is limited to teacher-talk, drill and practice where students are trained to do well in tests (Harlen, 2007).

In Singapore, a strong culture of reporting and accountability has led to summative assessments being predominantly used by teachers as evidence of student learning (Ng, 2010). An over-emphasis on grades/ marks seems to have created a relatively narrow understanding of what teaching and learning is and how it can be effectively measured. As a result, AfL strategies such as self-regulated learning and peer/ written feedback are rarely used as part of teaching and learning at Fairmont. The possible reasons that may contribute to this phenomenon include teachers' and students' inability to adapt to new student-centred styles of teaching and learning (such as peer feedback, self-regulated learning and quality written feedback in relation to performance standards) which require the students to take more control of their learning (Shepard, 2005). The teachers' lack of theoretical understanding about AfL strategies and how to use them, and the shortage of time to complete the syllabus to prepare the students for the GCE O' level examinations, are also possible reasons that prevent the teachers from using these strategies.

Hence, the present research inquiry began with attempts to understand current teaching and learning practices, the East Asian CHC and social context that emphasises summative practices, and teachers' and students' beliefs about learning, assessment and learner autonomy. This was followed by AfL learning workshops for students and professional learning sessions for teachers to bring AfL theory into practice. Using a mixed-methods approach, data were gathered to examine the possible impact of AfL strategies on teaching and learning and the challenges that might impede the sustainability of AfL practices.

1.4 Purpose of thesis and research questions

The main purpose of the research presented in this thesis is to examine the implementation and sustainability of AfL strategies in a summative teaching and learning environment. The research investigates the possible impact of using AfL on teaching and learning practices as well as teachers' and students' beliefs and attitudes. The emphasis on the use of AfL strategies was placed on the nature and

quality of the teachers' written feedback, the student's peer feedback and self-regulated learning, and the use of performance standards checklist rubrics.

The four guiding research questions that were examined in the present thesis were as follows:

1. What are the current beliefs and practices around assessment and feedback in the school?

This includes the roles of the teachers and the students in teaching and learning, and the teachers' knowledge of AfL (self-regulated learning, peer feedback and quality written feedback).

2. What are the outcomes of an intervention to increase AfL practices?

    a. What evidence is there of changes in teachers' teaching and students' learning beliefs, attitudes and behaviours following the intervention to increase AfL practices?
    b. Were there improvements in student learning processes/ strategies associated with the intervention, in terms of the students becoming more self-regulated in their learning?
    c. What factors may have contributed to the improvements outlined in (b)?

The second research question required, as a first step, the development and conduct of an intervention which was focused on the use of peer feedback, the quality of written feedback in relation to performance standards, and self-regulated learning in relation to the setting of learning goals and reflective writing.

3. What are the challenges for sustaining AfL and which strategies might be the most effective to sustain AfL?

The emphasis in the third research question was on apparent factors contributing to the challenges and continual use of AfL strategies in the teaching and learning of Social Studies over time, and the possibility of integrating assessment for, and of, learning in the Social Studies performance assessment system.

4. Might AfL strategies have contributed to improved high stakes assessment results?

This fourth research question was not originally planned, but arose as a point of interest following the implementation of the AfL strategies.

1.5 Significance of the research

A major contribution of the present research is its attention to the question of whether and how it might be possible to introduce AfL strategies into an existing summative teaching and learning environment. It is also noteworthy that the existing environment was one where limited provision was made to accommodate the integration of AfL practices. The research is also important because it gives students a 'voice' through which to share their experiences, and their perceptions of the benefits and challenges of using AfL practices. Finally, another key contribution of the research is its examination of students as self-directed learners arising from the implementation of AfL strategies, especially in an East Asian CHC context.

1.6 Organisation of thesis

This thesis is organised into six chapters. Chapter 1 provides the background information about AfL, the focus, objectives and significance of the thesis, followed by the research questions. Chapter 2 reviews the relevant literature about the Singapore education system, the influence of Confucian heritage cultures in teaching and learning, AfL strategies (peer feedback, self-regulated learning and quality written feedback) and the tensions and challenges that emerge when AfL strategies are used in summative classrooms. In Chapter 3, the research methodology and methods are described and justified. Chapter 4 presents the findings, and the analysis and interpretation of the data from the different phases of the research. Chapter 5 provides a discussion of the major findings which include the possibility of sustaining AfL in a summative context, the impact of AfL strategies such as peer feedback on teaching and learning, and the possibility of AfL influencing learning outcomes. Finally, Chapter 6 highlights the implications of the research results, along with the limitations of the study and recommendations for future research.

Chapter 2 Literature Review

2.1 Scope of the chapter

This literature review begins by outlining the history of Singapore's education system and the factors that have defined it. This review will provide the context to explain why assessment of learning is currently appear to be the main mode of teaching and learning in the school (also Singapore). The review covers the literature that explains the value or benefits of changing existing teaching and learning practice towards having a greater emphasis on learning through AfL practices, such as peer feedback and self-regulated learning. Hence, the literature review provides important suggestions about the possibility of implementing and sustaining AfL strategies in a summative teaching and learning environment. In addition, the literature review is used to explain and justify the emphasis in the present research on: feedback (including both teacher and peer feedback), students as self-regulated learners (including the setting of the students' own learning goals and the monitoring of their own learning), students' awareness of performance standards (and teacher communication of these standards), and the design and content of the intervention strategy. Finally, the literature review is used to develop the main research questions for the present study.

2.2 Introduction

The literature review explains the nature of the Singapore education system, which has an overbearing emphasis on grades which, in turn, has led to teacher-centred teaching and learning as the main pedagogy used in the classroom. In addition, Singapore has been slow to use AfL practices in the classroom even though AfL has increasingly been used in countries like Hong Kong and the United Kingdom for more than a decade (Berry, 2011a; Cheng, 2009; Hayward & Spencer, 2010; Wiliam, 2011b). There have been very few short-term longitudinal studies conducted on the use of AfL in Singapore, which has hampered the promotion of active debate about effective teaching, learning and assessment.

Hence, in relation to the existing teaching-centred environment, the present study attempts to implement AfL strategies such as peer feedback, self-regulated learning and quality written feedback, and to examine teachers' and students' experiences in

using AfL strategies. The literature for the review has also been used to shape the design of the AfL intervention, particularly the learning workshops for the teacher and student participants. The literature review is used to support the following themes about the effectiveness of AfL in improving teaching and learning:

1. Both teachers and students should work in collaboration to use AfL;
2. Students should be self-regulated learners who understand the performance standards and assessment criteria so that they are able to assess their learning and take action to close their learning gaps; and
3. Teachers should be prepared to bridge AfL theory into practice, and students (who are often ignored when new innovations are introduced) should be trained/ coached on how to use AfL strategies in their learning.

2.3 At a glance: History of the Singapore education system

Since the 1950s, Singapore has followed a 6-4-2 system (six years primary, four years secondary and two years pre-university) with the Primary School Leaving Examination, and the Ordinary and Advanced Level examinations being very important high stake national testing systems. These national examinations determine the path of the educational journey for students as they progress through the system (Gopinathan, 2012). Merit-based selection, regardless of race, language or religion, was and still is emphasised as the key to providing equal educational opportunities for all citizens of Singapore to prosper in life (Gopinathan, 2012).

For years, the education system was a "central issue in the debate over the nature of the Singapore society-to-be" (Gopinathan, 1997, p. 3) and the country's ability to survive in the highly competitive global economy (Gopinathan, 2012). In the 1970s, to "support the development of a literate and technically trained workforce" (Goh & Gopinathan, 2006, p. 7), screening (also known as streaming) of students was carried out to allow students to progress at a pace appropriate to their abilities (Goh & Gopinathan, 2006). By the 1980s, the key features of the efficiency-driven education system were in place; "… tracking, with regular student assessment regulated by the Ministry of Education's Research and Testing Division …" (Goh & Gopinathan, 2006, p. 27). In the 1990s, 'ability-driven education' saw the education system "redefined and realigned" (Goh & Gopinathan, 2006, p. 39) towards a knowledged-based economy. This resulted in Singapore doing well in the Trends in International Mathematics and Science Study (TIMSS), which many attributed to the

categorisation of students based on their abilities and more focused teaching with an emphasis on the understanding of concepts (Gopinathan, 1997).

The next phase of change was the 'Thinking Schools, Learning Nation (TSLN)' (Goh, 1997) and the 'Teach Less, Learn More (TLLM)' programmes (Lee, 2004), which were introduced to strengthen the capacity of the population to learn and inculcate lifelong learning principles. Schools were given autonomy and ownership over their own curricula (Goh & Gopinathan, 2006), but the "culture of effort and excellence" (Gopinathan, 2012, p. 68) was still maintained. This proved to be a challenge as Singapore "seeks to keep the best of the old in the education system while forcing through needed changes" (Goh & Gopinathan, 2006, p. 41).

This "strictly top-down approach in planning, disseminating and enforcing educational change was a clear reflection of the Singapore government's paternalistic style of rule" (Goh & Gopinathan, 2006, p. 30). As a result of these educational changes,

> *Firstly, it generated the "yes-man" syndrome and the acceptance of change without question by those below. Secondly, it inculcated an over-reliance on the top leaders for direction. Thirdly, it nurtured a spoon-feeding culture. The end-result was an educational service, which lacked autonomy, initiative and a general sense of detachment from the policy-makers. Within schools, teachers and children alike are "mechanically fed" by a bureaucratically designated and rigid curriculum* (p. 30).

However, a major repercussion of these top-down bureaucratic changes is that they reduce pedagogical innovation such as student-centred education and AfL practices from being used in Singapore's classrooms (Gopinathan, 1997).

According to Hargreaves (2012), 'The Fourth Way' suggests a new method for how Singapore can reform her education system by moving away from prescribed standardisation and embracing a range of pedagogic skills that will lead to more holistic student outcomes (Gopinathan, 2012).

2.4 Factors that have defined the Singapore education system

This section shows how the social and cultural codes that had been long embedded in the education system (and ingrained in many East Asian Confucius

Heritage Culture (CHC) families) have proven to be a major challenge to reverse, which may potentially become a barrier to the implementation and maintenance of AfL strategies.

For decades, Singapore's strong examination culture has been a major influence on the curriculum and pedagogy, as well as on assessment practices. The Singapore Prime Minister, Mr. Lee Hsien Loong, has affirmed that Singapore's culture, economy and social environment will define what learning, or type of education system, Singapore needs in order to survive (Ng, 2006; Saravanan, 2005). Filer's (2000) framework of sociological discourses of assessment accurately mirrors the Prime Minister's statement (see Figure 1).
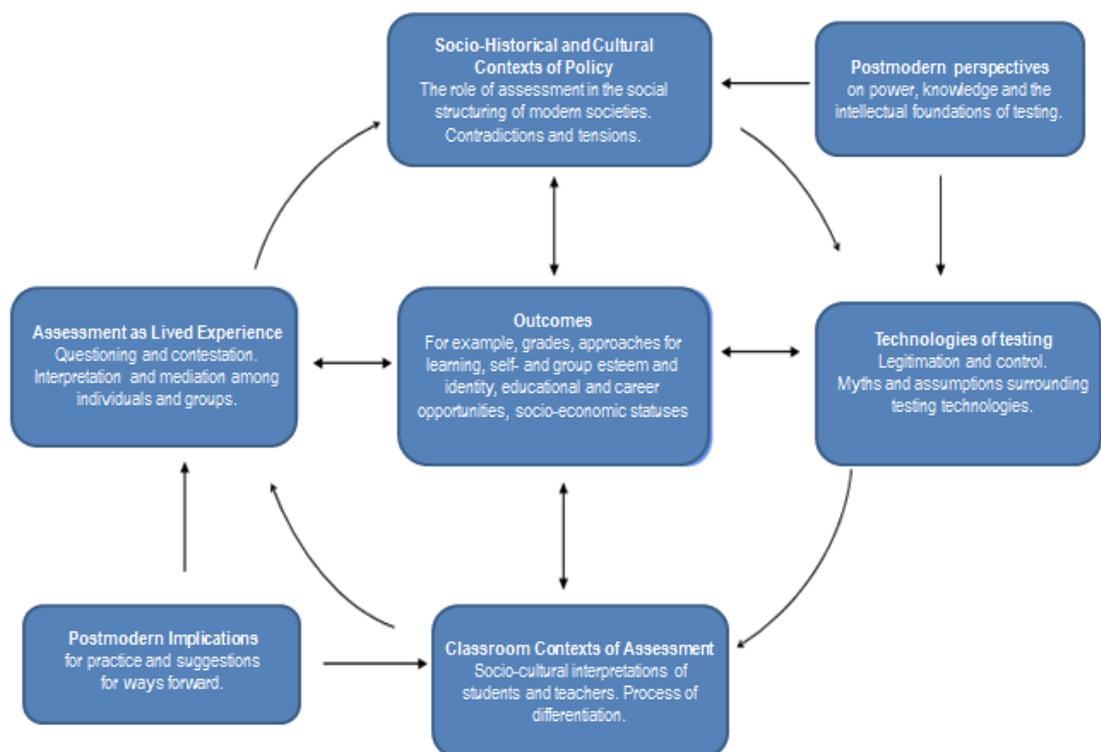
Figure 1. Themes within sociological discourses of assessment. Reprinted from "Assessment: Social practice and social product" by A. Filer, 2000, p. 4.

In this framework, Filer identifies that other than having an educational purpose, assessment performs an array of political and social intentions that are acted out in wider society. These wider intentions involve "social differentiation and reproduction, social control and the legitimation of particular forms of knowledge and culture of the socially powerful groups" (Filer, 2000, p. 2). Filer critiques the

"science of testing" (Filer, 2000, p. 2) and states that assessment that takes place in such a situation is bounded by social contexts and performed "on, by and for" (Filer, 2000, p. 2) the social authority, which leads to disparities in educational and social outcomes. These outcomes are, in turn, legitimised within society by how people come to represent and view themselves and how they expect others to view them (Filer, 2000). Hence, in the present study, the integration of AfL into existing assessment practice is pursued since testing is part and parcel of the Singaporean way of life.

Culture influences the mind as it offers various constructions that define our world, particularly of how we conceive ourselves to be (Bruner, 1996). Understanding the cultural trends, principles and traditions that determine the construction of what quality or merit means for a particular cultural group, may explain why assessment of learning is used (Kennedy, Chan, Fok, & Yu, 2008; Ng, 2006).

Filer's framework fits well with the principles of East Asian cultures in which Confucian values are practiced and competitive examinations are the epitome of education (Cheah, 1998; Marginson, 2011). Students work hard to produce better results as a duty to bring honour to the family and as a path to upward social mobility and success in life (Gopinathan, 1997; Kennedy, et al., 2008; Li, 2003; Marginson, 2011; Shim, 2008; Wolf & Bokhorst-Heng, 2008; Wong, 2008). This leads to intense competition and pressure from parents for their children to excel academically in school (Gopinathan, 1997; Singapore, 2006), which could possibly explain why students might resist collaborative learning such as peer feedback.

Such beliefs influence the teachers, students and parents as to how the successful learner, and indeed, success in learning are perceived. The belief among teachers, students and parents is firstly, that learning is a journey towards "self-perfection" (Li, 2003, p. 265), which is translated as faring academically better in comparison with the rest of the children in the class (Chong, 2009; Kennedy, et al., 2008; Wolf & Bokhorst-Heng, 2008). Secondly, academic failure is scorned by the family and, at times, by wider society (Li, 2003), since failure will limit the child's opportunity for a good future (Clarke, 2011). Thirdly, "the contradiction between culture in the existing classroom community and the new mediating artefacts, particularly peer feedback" (Webb & Jones, 2009, p. 175) is challenging for both teachers and

students to incorporate into their teaching and learning practices. These issues are important to discuss and address during the learning workshops to broaden the teachers' and the students' definition of success in learning which should not be limited to attaining good grades.

2.5 The Singapore assessment system

The Singapore education system is largely centralised with curriculum guides, textbooks and national examinations being approved by the Ministry of Education (Li, 2007; Tan, 2011a). In addition, the Singapore examination system has a strong focus on summative outcomes to measure the performance of students (Chong, 2009). This often governs the teaching and learning practices, the choice and types of assessment used, the setting of the learning conditions and the promotion of a certain style of teacher and student behaviour (Kennedy, et al., 2008). This overpowering dominance of an examination culture to perform well (Li, 2007) (indirectly directed by a top-down educational model) has negative implications for engagement in learning (Harlen, 2006). However, the examination culture also establishes an equitable system for all, where each student is given equal opportunity to pursue the next stage of their educational path (Clarke, 2011; Goh, Tan, & Chow, 2008; Tan, 2011a). Hence, sustaining AfL practices might be a challenge because it has not been actively advocated for or formally integrated into the education system by the Ministry of Education.

2.5.1 Limitations of assessment of learning practice

Assessment influences what is taught and how it is taught (Black & Wiliam, 1998b). Assessment is about "grading and about learning; it is about evaluating student achievements and teaching them better; it is about standards and invokes comparison between individuals; it communicates explicit and hidden messages" (Carless, 2007a, p. 57). For assessment to be functional, teachers and students must be able to use the data to evaluate learning progress and make decisions to restructure teaching to address the learning gaps (Clarke, 2011; Reeves, 2004). However, this function of assessment is often overlooked by teachers as they tend to focus only on grades. Hence, during the different phases of this research, both the teacher and student participants will be reminded and directed to look beyond grades to determine the learning.

According to Chan et al (2006) and Cartney (2010), assessment drives learning and the types of assessment used will determine the style of teaching and learning adopted. For example, if assessment is used formatively, feedback will be given by teachers as the students actively seek this feedback to feed forward to the next assignment (Clarke, 2011; Irons, 2008). Hence, assessment that drives active learning should be diagnostic (learner-centred) so that informed decisions can be made to identify and respond to the students' learning requirements (Bennett, 2009; Jenkins, 2010; OECD, 2005).

However, in Asia, the choice of assessment is geared more towards testing and student tracking instead of the assessment of learning (Ainsworth & Viegut, 2006; Gopinathan, 1997; Singapore, 2006), and the outcomes of these tests has often made little impact on current teaching and learning practices. Many teachers limit the function of assessment to testing and fail to engage students in learning because in a 'testing classroom', teaching becomes the transmission of information (Berry, 2010; Hargreaves, 2012). This system-compelled force (see Figure 2) (Berry, 2010) reduces students to passive recipients of rote learning routines dictated by the teachers who are under pressure to complete the syllabus (Harlen, 2006; Saravanan, 2005). Freire (1972) states that rote learning or 'learning without thinking' completely limits, isolates and "dehumanise[s]" (p. 47) the students as learners.
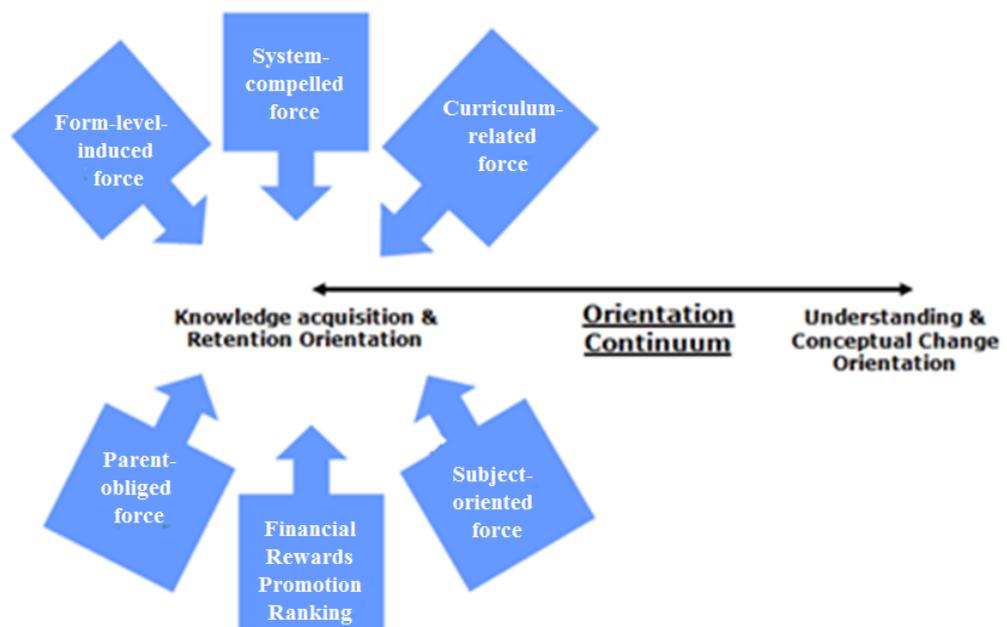
Figure 2. Different factors that influence the choice of teaching and learning practices and assessment used (Berry, 2010, p. 105).

Clarke (2011), Harlen (2006), and Black & Wiliam (1998b) state that the overemphasis on testing and grading may lead to a "backwash effect" (Clarke, 2011, p. 12) where learning becomes superficial as the students become obsessed with attaining excellent marks, instead of finding out how much they have learnt. Subsequently, teaching priorities are limited to preparing students to perform well in examinations: to predict examination questions; to memorise; and to 'regurgitate' model answers to answer examination questions (Chan, et al., 2006; Cheng, 2012; Harlen, 2005; Jenkins, 2010; Koh, Tan, & Ng, 2012).

Students (and often teachers as well) see this type of teaching and learning as the only effective pedagogy to help students to attain excellent grades and thus, they question the need for using AfL strategies. According to Berry (2010), this type of assessment orientation is labelled as knowledge acquisition and retention (the two other assessment types are understanding and conceptual change and knowledge acquisition and understanding, see Figure 2), where memorising content and the mechanical application of a step-by-step formula when answering examination questions are the key to successful learning (Gordon & Reese, 1997; Harlen, 2005). This superficial learning is an example of knowledge being gained through acquisition instead of investigation, discovery and deep understanding of concepts which formative assessment or AfL strives to achieve (Berry, 2010; Tan, 2011a).

In 2004/2005, a study conducted in Singapore showed that assessment tasks for subjects such as Social Studies "focused heavily on assessing students' memorisation of factual and procedural knowledge" (Tan, 2011a, p. 95). This can result in teaching becoming "bookish" (Gopinathan, 1997, p. 7), rigid and structured with little creativity incorporated to enhance the learning process other than the reproduction of textbook materials (Ainsworth & Viegut, 2006; Berry, 2010; Wiliam, Lee, Harrison, & Black, 2004). Classroom development is also thwarted by teachers who are pressed for time to complete the strict examination syllabus (also referred to as curriculum/ subject related forces, see Figure 2) (Chan, et al., 2006) and to carry out drill and practice exercises in preparation for the summative examinations (Berry, 2010; Harlen, 2005; Saravanan, 2005). Hence, time must be allocated to teachers to prepare AfL lessons and to work around the syllabus so that AfL can be implemented and eventually sustained.

Thus, in assessment of learning practices, learning is not driven by the students' learning progress, (Harlen, 2006) and teachers do not adjust instruction to help students to maximise their learning potential (Safer & Fleischman, 2005). Such deficiencies in the quality of classroom instruction call for a change to improve teaching pedagogy by incorporating AfL strategies into existing teaching and learning practices.

2.5.2 Questioning the need to change

In Singapore, summative assessment has successfully served the competitive nature of the education system where students are ranked to gain admission to tertiary institutions and white-collar employment (Tan, 2011b). Hence, many teachers question the need to change existing assessment and classroom practices (Richards, Gallo, & Renandya, 2001). According to Hattie & Jaeger (1998), the mentality of these teachers to not disturb the 'order' can be likened to that of "a moss rock" (p. 118), where the teachers enjoy a learning rate that is smooth but slow with few challenging goals.

A possible reason for remaining with this 'moss rock' mentality is that the teachers feel that they are accountable to the students and their parents to ensure that the students perform well in the high-stake national examinations (referred to as parent-obliged force, see Figure 2) (Gopinathan, 2012; Harlen, 2005; Kim, Lim, & Habib, 2010). Hence, the teachers will select strategies that they consider to be of benefit to their students to "get through the system" (Berry, 2010, p. 103). Intrinsic rewards (see Figure 2) such as promotions and performance bonuses also encourage teachers to ensure that their students perform well on summative assessments (Hargreaves, 2012; Liew, 2012). Therefore, it becomes important to address these valid concerns that the teachers have, and to simultaneously emphasise the need to reappraise teaching practices constantly to ensure that meaningful educational experiences can be gained by students.

According to Berry (2010), a successful change towards an 'understanding and conceptual change' orientation style of teaching and learning will depend on the teachers' experience, values, interests and the orientation of the educational system. These factors play an important role in the choice of pedagogy and assessment practices that teachers select and these factors are not easy to change. Thus, by

providing teachers with AfL training; a safe environment to experience the use of AfL; and having conversations as they reflect on their AfL experiences, without having the fear of being appraised, could possibly encourage teachers to take small steps towards changing their teaching practice from teacher-centred to student-centred teaching and learning.

2.5.3 Changes in the educational assessment system orientation

In 2005, the Organisation of Economic Cooperation and Development (OECD) called for a balance in emphasis between high-stakes examinations and learning activities that embody formative assessment in countries that have strong performance accountability (OECD, 2005). In view of this call, the 'Curriculum 2015' (C2015), 'Primary Education Review and Implementation' (PERI) and 'Secondary Education Review and Implementation' (SERI) committees reviewed and recommended that the education system be moved towards values-driven and student-centric education (Fu, 2010; Heng, 2012; Koh, et al., 2012; Ng, 2008), which emphasise "deep understanding and higher order thinking rather than rote memorisation of factual and procedural knowledge" (Koh, et al., 2012). For a start, formative assessment will be institutionalised at the lower primary level. However, summative assessment will still play a key role at the upper primary level for placement and ability-tracking purposes (Kim, et al., 2010). This gradual change towards AfL practice that starts at the primary level should be a signal to secondary school teachers that their future students may have difficulty adapting to their existing teacher-talk lessons. Thus, there is an urgent need for the teachers to start incorporating AfL strategies into their lessons.

The Singapore assessment structure was also reviewed to reflect a more holistic view of the performance of schools, focusing on both academic and non-academic aspects. For example, school achievement tables were removed in 2012 to avoid unhealthy competition (Heng, 2012). Other changes included reducing competition based on absolute academic results through the removal of the Masterplan of Awards, and the removal of a number of performance measures in the School Excellence Model used to appraise the management, educational processes and overall performance of schools. These changes were made to send a clear message to the public that grading, testing and examinations no longer define academic success.

Sellan et al., (2006) state that for educational reforms to truly succeed, assessment needs to shift in tandem with the reforms. If the assessment system is changed to reflect AfL, the curriculum must also be revamped to align with the changes in assessment (Chan, et al., 2006; Sellan, et al., 2006), which will modify the way teachers teach and students learn (Black & Wiliam, 1998a). Hence, the present study aims to provide teachers with the pedagogical skills and knowledge about AfL before the change takes place (the intervention). In addition, students must be instilled with particular skills as well, such as the ability to collaborate and communicate to be competent self-directed learners who are proactive and able to seek, evaluate, process and apply new knowledge (Sellan, et al., 2006). Only then will the move towards learning with understanding be sustainable.

2.6 AfL: How it works

In order to avoid the superficial implementation of AfL strategies that may affect their continual use in the future, teachers and students must be equipped with AfL principles and knowledge, particularly on how to plan, conduct, review and sustain AfL practices (Fullan, 2007). This education becomes the main focus of the learning workshops.

When using AfL strategies in teaching and learning, both the teacher and the students become central decision-makers, actively engaging with each other to determine what students know and do not know, and making decisions and taking actions about how best to further improve the students' learning progress (Harrison, 2013). The AfL framework adapted from Harlen (2006) (see Figure 3) is a useful guide used in the present study to help teachers implement and eventually sustain AfL practices.

Based on the AfL framework, before an AfL lesson is conducted, teachers must have a clear idea about the learning goals that the students must achieve for the lesson; translate knowledge about performance standards in relation to the learning goals; and create avenues to assist students to achieve the learning goals by providing them with opportunities to seek help during the process of learning (Isaacs, 2001; Sadler, 1998).

At the beginning of the lesson, the teacher explains the learning goals that need to be accomplished to the students (Jenkins, 2010; Stiggins, 2002; Wiggins, 2004).

Hence, the students will be aware of the learning expectations, the set accomplishments, and how performance will be measured at the start and throughout the learning process (Jenkins, 2010; Stiggins, 2002; Wiggins, 2004).
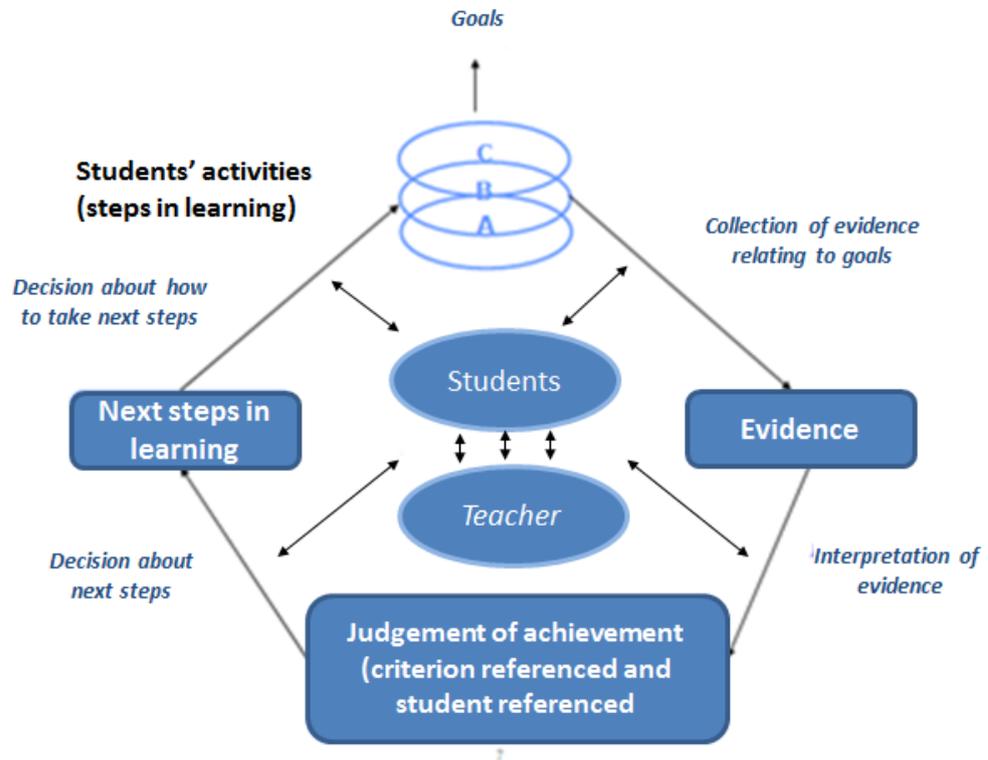
Figure 3.   Assessment for learning framework (adapted from Harlen, 2006, p. 105).

For effective learning to take place, teachers must believe that the students are active participants in their own learning and that they are capable of constructing their own knowledge (Berry, 2010; Kim, et al., 2010). In contrast, the students must take ownership to be self-regulated learners actively monitoring and evaluating their own learning (Kim, et al., 2010; Newton, 2007). Teachers can assist by showing how learning progress is measured and achieved for the students to be able to replicate, reflect and interpret what learning achievement is (Black, Harrison, Lee, Marshall, & Wiliam, 2004; Stiggins, 2002; Wiggins, 2004). Furthermore, through the teacher-student dialogue about learning achievements, evidence of students' thinking and understanding of the learning goals and performance standards can be made visible (Boud & Molloy, 2012; Kim, et al., 2010; Stiggins, 2002). Throughout the AfL lesson, teachers must also be active in gathering and interpreting evidence to understand the students' current learning progress (Heritage, 2010a). These forms of evidence are also useful feedback about teaching effectiveness and an indicator of

whether the teacher needs to adjust their classroom instruction to suit the students'
current learning progress (Bennett, 2009).

Hence, for AfL to be successful, students must be able to use performance
standards and learning goals to self-regulate their learning. For the teachers,
information about the students' learning progress allows them to adjust classroom
instruction in order to close the learning gaps, thus ensuring that effective learning
happens. Hence, in the learning workshops (and during the implementation phase),
the main priority is to train and eventually coach the students in how to self-regulate
their learning as a life skill.

2.6.1 Passive to active agent of learning

In the present study, the main emphasis will be placed on transforming the
students into active learners. According to Nicol (2010) and Cartney (2010), for
effective learning to take place, the students must be changed from passive to active
participants in learning by empowering them to take more responsibility and
accountability for their own learning (Nicol & Macfarlane-Dick, 2006; OECD, 2005;
Sadler, 1998). Thus, conducting peer feedback activity not only helps the students to
become active learners, it also empowers them to take ownership of their learning.

As active participants in learning, the students manage their own construction of
new knowledge; understand the diagnostic feedback given; and act upon the
feedback to aid the process of self-assessment and feed forward (Ackerman & Gross,
2010; Cartney, 2010; Nicol & Macfarlane-Dick, 2006). Thus, in an AfL lesson, the
students no longer wait to be dictated to by the teacher to determine whether they
have learnt or not (Broadfoot et al., 2002). As active learners, through the process of
metacognition, the students are able to self-regulate aspects of their thinking,
motivation and behaviour by predicting their performance, and monitoring, reflecting
on and evaluating their current level of mastery and understanding to be able to reach
the highest performance standards (Gielen, Peeters, Dochy, Onghena, & Struyven,
2010; Nicol, 2010).

2.6.2 Approach to learning: Self-regulated learning

For learning to be effective, AfL provides the opportunity for students to be
aware of their learning progress through the process of self-regulated learning

(Jenkins, 2010; Rae & Cochrane, 2008). When students facilitate their own learning, the possibility of attaining learning success motivates them to put in effort while the learning is in progress (Andrade, 2010; Black, et al., 2004; Juwah, 2004; Stiggins, 2005a). Hence, in the present study, it becomes essential to understand what influences student learning, how they learn, and how they know that they have learnt.

According to Nuthall (1999), the "acquisition of knowledge is a multifaceted and multi-layered process" (p. 338) that influences how students learn. For example, the learners' interests and their perceptions of the learning goals influence how they approach, engage and respond to what they want to learn and what they have learnt (Ames & Archer, 1988; Lopez, 2011; Nuthall, 1999). Biggs' (1987) model of student learning (see Figure 4) is an excellent illustration of how situational (subject area, teaching method, duration to complete the syllabus) and personal factors (prior knowledge, abilities, IQ, values and attitudes) influence students' approach to their learning. These factors also have a direct outcome on performance (a) (nomothetic), which affect students' motives for taking on learning and the strategies they choose to adopt in approaching their learning (b) (idiographic).
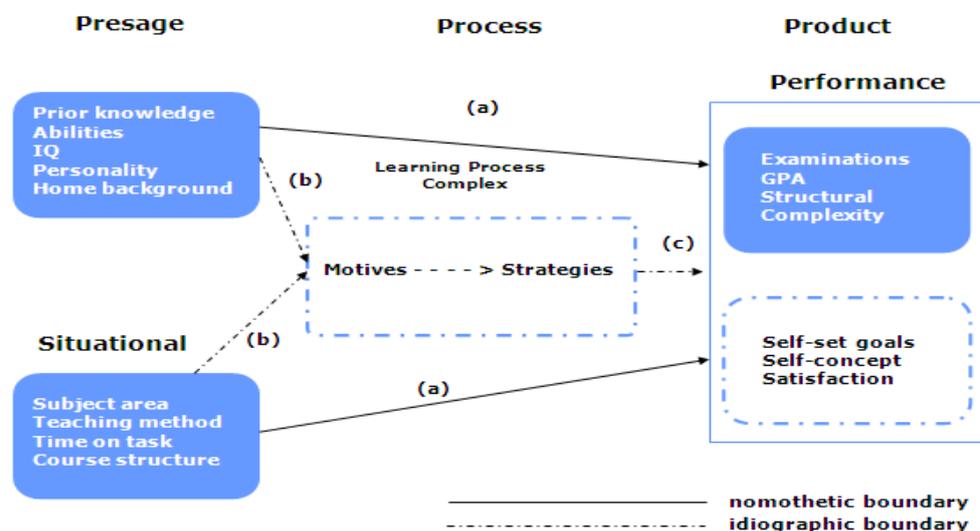
Figure 4. General model of student learning. Reprinted from "Student approaches to learning and studying" by J.B. Biggs, 1987, p. 18.

Additionally, the 'learning process complex' determines how the students decide to go about their learning, particularly the choice of learning strategies they select that will have an impact on their performance (c). It seems that in East Asia, the

learning process is seen more objectively in terms of grades, instead of subjectively, in terms of satisfaction in accomplishing learning goals. This strong emphasis on grades as a determinant of success in learning can be a barrier to the continual use of AfL strategies.

According to Bransford et al. (1999), students can either be mastery- or performance-oriented learners. In AfL practice, students become mastery-oriented learners where success in learning is defined through the students' learning progress instead of through grades (see Table 1). In a mastery-oriented learning environment, the teacher focuses on how the students are learning instead of how they are performing (Schraw, 1998). Thus, mastery-oriented students are active learners who set goals, and engage in their learning tasks as they evaluate their learning to achieve mastery of new skills (Ames & Archer, 1988; Packer & Goicoechea, 2000).

Table 1 Achievement Goal Analysis of Classroom Climate (Ames & Archer, 1988, p. 261).

Climate Dimensions	Mastery Goal	Performance Goal
Success defined as…	Improvement/progress	High grades, high normative performance
Value placed on…	Effort/learning	Normatively high ability
Reasons for satisfaction…	Work hard, challenge	Doing better than others
Teacher oriented towards	How students are learning	How students are performing
View of errors/mistakes…	Part of learning	Anxiety eliciting
Focus of attention…	Process of learning	Own performance relative to others'
Reasons for effort…	Learning something new	High grades, performing better than others
Evaluation criteria…	Absolute progress	Normative

For self-regulated learning to be effective, teachers need to gather information about the students' existing knowledge to make connections to the new knowledge (Nuthall, 1999). When the new knowledge has been effectively integrated with the existing knowledge, the new knowledge can then be embedded into the students' long-term memory (Bransford, et al., 1999; Flavell, 1976; Nuthall, 1999). To ensure that the process of integration is successful, the students must actively construct their own "knowledge - individually and collectively" (Davis, Maher, & Noddings, 1990, p. 3) assisted by their teacher and peers. As a result, the transfer of learning is more successful as the students become more aware about how they learn and what they have or have not learnt (Bransford, et al., 1999). This informs the present study in that for self-regulated learning to work, teachers must actively assist the students in assessing their learning. The teachers must be aware that self-regulating learning is not solely the responsibility of the students.

Self-regulated learners are active learners who believe that academic learning is about doing something for oneself instead of something that is done to, or for, them (Zimmerman, 1998). In an AfL learning environment, active learners are "agents of their own change" (Boud & Molloy, 2012, p. 705), in charge of their own learning as they independently set learning goals (Bransford, et al., 1999; Zimmerman, 1998). According to Schunk (2001), Nicol & Macfarlane-Dick (2006), goal setting is about establishing standards and using learning strategies to achieve these standards. As an important component of self-regulated learning, the setting of learning goals helps the students to direct their focus, thoughts, feelings and actions towards the attainment of the learning goals (Schunk, 2001). In addition, the students must understand the performance standards and the assessment criteria to be able to assess their own learning progress based on the set learning goals (Juwah, 2004; Pokorny & Pickford, 2010).

In the present study, the creation of a learning environment and eventually a culture where the students can take charge of their own learning is one of the main priorities to ensure that AfL works. Hence, peer feedback, setting learning goals, and reflective writing, can help the students to self-monitor and assess their learning progress. However, the teachers must initially share the role of being an assessor of learning with their students before the students can self-assess their own learning (Juwah, 2004). Table 2 shows the self-assessment cycle where the students self-monitor their own learning behaviours as they question their own understandings of the learning task. In the self-judgement phase, the students identify what they know and close any learning gaps due to any misunderstandings of the materials and/ or the knowledge. The last phase of the self-assessment cycle is to establish new learning targets that can take the learning to another step (Kurnaz & Çimer, 2010).

The process of self-regulated learning will not be completed if the students are unable to comprehend the performance standards and the assessment criteria (Black, et al., 2004; Zimmerman & Schunk, 2008). Hattie (2008), Koka & Hein (2006) believe that students must have a visible idea about what success in learning looks like, so that they are motivated to achieve their learning goals. According to Stiggins (2005b), teachers can assist by scaffolding the performance standards; ensuring that the performance standards and criteria are student-friendly for easy comprehension;

converting goals into bite-size classroom assessment that reflect student achievement; and collaborating with the students by motivating them to pursue their learning goals.

Table 2 Student Self-Assessment Cycle (Kurnaz & Çimer, 2010, p. 3666).

Self-Monitoring Awareness of thinking or learning actions. What I have learnt?		
How do students decide if they learn?	**Learning Targets and Instructional Correctives** Implementing strategies to improve performance. How can I apply my learning to subsequent instruction?	
Self-Judgement Knowing progress toward learning goals. What I know? What I do not know? What I still want to know?		

In the present study, there is a strong assumption that self-regulated learning needs to be a central component of AfL for it to be successful. Without the skill of self-regulation, according to Jenkins (2010), students are unable to engage with feedback to evaluate their work against the criteria that defines success in learning. Collaborative learning will also be hampered since the students are not competent in identifying their learning gaps and seeking help from their teachers and peers to address the gaps (Kim, et al., 2010). Eventually, the students may become demotivated as they are not able to improve their learning (Paladino, 2008; Rubin, 2006).

2.6.3 Feedback as a component of effective learning

Self-regulated learning is conceptualised in the present study in relation to the ability of the students to use given feedback to assess and improve their learning and achievement. Feedback refers to "information provided by teachers to students about their work" (Boud & Molloy, 2012, p. 700). Hattie and Timperley (2007), conceptualise feedback as "information by an agent (e.g. teacher, peer, parent, self, experience) regarding aspects of one's performance or understanding … which is a consequence of performance" (p. 81). Feedback is far more informative in enhancing learning than the marks that condense and summarise the quality of the student's work (Sadler, 1998; Saravanan, 2005; Shute, 2008). According to Retna & Cavana (2009), students who take into account feedback in their learning have a higher possibility of closing their incompetency gaps.

Nicol & Macfarlane-Dick's (2006) feedback framework (see Figure 5) provides a clear illustration of how students use feedback to monitor their learning in an AfL setting. According to Fisher & Frey (2009), when students are engaged with the learning task, they use a 'feed up' process to formulate their learning goals and then use the feedback gathered to evaluate their learning progress in relation to their learning goals. Throughout this process of self-assessment, the descriptive feedback generated helps the students to take action to review their learning task, learning goals and learning strategies as they continuously identify and make sense of the gaps, learning outcomes and their performance while accomplishing the task (Juwah, 2004; Stiggins, 2005a).
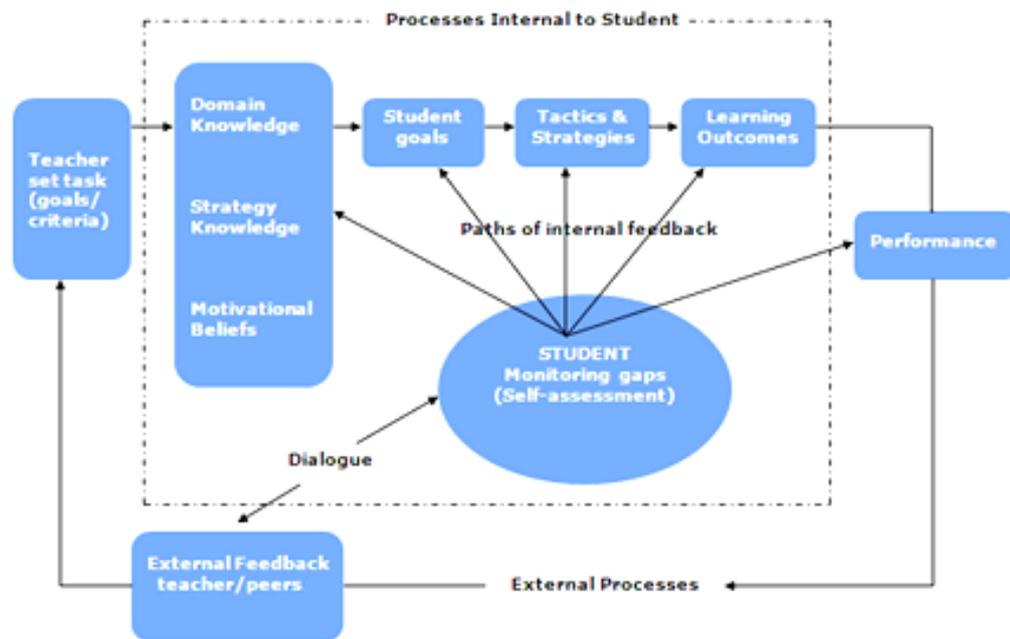
Figure 5. Model of self-regulated learning and the feedback principles that develop self-regulation in students (adapted from Nicol & Macfarlane-Dick, 2006).

Nicol & Macfarlane-Dick (2006) also highlight seven 'external processes' that help students to use feedback more effectively to support their learning:

1. Teachers need to facilitate the development of self-assessment in learning;
2. Dialogue between students, teachers and peers must be encouraged around learning;
3. Teachers and students need to understand and clarify what good performance is;
4. There are opportunities provided to close the gap between current and desired performance;
5. Teachers (or peers) deliver high quality information to students about their learning;

6. There is a positive environment that raises self-esteem and motivation; and
7. Teachers gather information that improves their teaching.

Hence, the emphasis of the present study is also to examine how student-teacher/peer interactions, through the process of self-regulated learning (what was and was not accomplished in learning) can potentially move student learning forward as they come to understand how success in learning is measured.

2.6.3.1 Benefits of feedback

According to Bitchener & Knoch (2008), students who received written feedback improved the accuracy of their writing as they were able to retain the feedback information over an extended period of time. Effective feedback also reduces the cognitive load of a learner as the trial and error process of learning is significantly reduced (Sadler, 1998; Shute, 2008). Kluger & Denisi's (1996) research showed that feedback alone improved students' subsequent interest in learning and performance, when compared to only giving marks, or feedback and marks. By only giving marks, the likelihood of the students ignoring the written feedback increases as they become preoccupied with comparing their marks with that of their peers (Glover & Brown, 2006; Hodgson & Pyle, 2010). Hence, Pokorny & Pickford (2010) suggest that grading and feedback should be separated to direct the students to focus on the feedback and then use it as feed forward.

Feedback is useful in motivating students to learn. With appropriate feedback, learning success can be positively influenced. As feedback can influence students' self-efficacy (2000), this results in students being more motivated to learn faster when they receive detailed and timely feedback of how well they are doing and what they can do to attain the highest performance standards (Nicol, 2010).

However, in the East Asian CHC context, marks are integral to defining successful learning and it is impossible to ignore their importance as a motivator for student learning. Hence, the present study will explore how best to incorporate feedback that is effective enough for students to act upon, instead of focusing only on the marks that lack information on how to improve learning.

2.6.3.2 Feedback: Making it work

Since, feedback is the critical component that makes AfL work, particularly self-regulated learning, it becomes important to teach the teacher and student participants how to provide and receive feedback during the learning workshops. For example, feedback of a high quality reflects the teacher's criticism of the student's work, rather than of the student (Hattie & Jaeger, 1998; Newton, 2007; Stiggins, 2005a), because feedback can have either a positive or negative impact on the students' emotions (Ackerman & Gross, 2010; Sargeant et al., 2011). Thus, using the language of care when giving feedback increases the students' receptiveness towards the given feedback (Bartolome, 1987; Hattie & Jaeger, 1998; Pokorny & Pickford, 2010; Weaver, 2006).

For feedback to remain effective, teachers should avoid giving excessive feedback to their students (Ackerman & Gross, 2010). Rae & Cochrane (2008) state that excessive feedback leads students to rely on their teacher to assess their learning instead of self-assessing their own learning. Hence, in the present study, Juwah's (2004) suggestions about giving only three well-considered pieces of feedback per task, to avoid overwhelming the students with the daunting task of deciding what to act on, was adhered to. To help the teacher participants to remain objective when giving feedback, all the feedback must be in relation to the performance standards and the assessment criteria (Sadler, 1998; Stiggins, 2005a). Hence, the present study stresses the sharing of the assessment criteria with the students instead of reserving it exclusively for the teachers (Cartney, 2010; Nicol, 2010).

Coaching the students on how to interpret the performance standards and assessment criteria is also integrated into the planned peer feedback activity in the present study since 'demystifying' the language of assessment, according to Gielen et al. (2010), would increase the students' capacity to deal with complex assessment tasks. Through the teacher-student dialogue, the students can internalise the meaning of the feedback in relation to the performance standards and assessment criteria (Gielen, Peeters, et al., 2010; Jenkins, 2010; Juwah, 2004; Nicol, 2010). When students integrate these understandings as part of the learning process, their motivation increases as the learning task becomes more manageable and is able to be accomplished (Gielen, Peeters, et al., 2010; Shute, 2008).

For students to make sense of the given feedback, teachers' learning expectations and students' learning goals and understanding of the performance standards must be matched (Jenkins, 2010; Marzano, 2009; Pratt, 1998). Feedback which is aligned to the students' learning goals, helps the students to see the relevance and the value of responding to the feedback (Shute, 2008). A dialogue about the feedback between the teacher and the student further informs the teacher whether the feedback provided is useful and taken up by the student so that the feedback loop is completed (Sadler, 1998). Hence, it becomes pertinent in the present study that the teachers inform the students of the learning expectations at the beginning of each lesson and help to synchronise the students' learning goals and their abilities to meet these expectations.

For feedback to make a positive impact on learning, it must be developmental and timely to bridge the gap between actual and required performance (Michaelsen & Schultheiss, 1989; Nicol, 2010). According to Wiggins (2012), feedback which is timely, where the students' learning is still fresh in their mind, is better than feedback given later. Timely feedback also helps in the process of feed forward where current learning is still relevant for the student to make connections to improve their next assignment (Juwah, 2004; Rae & Cochrane, 2008). According to Shute (2008), timely feedback is beneficial as students can act on the feedback immediately to prevent errors from being encoded in their memory.

However, Shute (2008) cautions that feedback is only effective if students are given time to reflect on their work. Nicol (2010) states that when students have an "inner dialogue" (p. 504) with themselves to decode the feedback information, they compare the feedback given with the performance standards against their work. Eventually, the students make judgments about what and how improvements can be further made on their work (Nicol, 2010). Hence, the reflection booklet is factored into the students' everyday Social Studies lesson activity to provide them with the time to reflect on their learning and to take action to remedy any misconceptions about their learning.

2.6.3.3 Challenges of giving feedback

In the present study, the challenges the teacher participants faced in giving quality feedback to the students are acknowledged. The large student-to-teacher ratio, increasing workloads and the pressure to meet the excessive tests quota are

reasons highlighted by Boozer & Cacciola (2001), Blatchford, Russell, Bassett, Brown & Martin (2007), Nicol (2010) as barriers to writing constructive feedback. Research in higher education found that poorly constructed feedback may lead to students being unable to understand the genre of the given feedback because the language of feedback is only clear to the teacher and not the students (Mutch, 2003). As a result, students are not able to deconstruct the feedback accurately and this increases the likelihood of the feedback being misinterpreted or completely ignored by the students (Mutch, 2003; Pokorny & Pickford, 2010; Weaver, 2006).

Hence, for AfL practice to help students in their learning, they must be able to use the feedback effectively to make decisions on what actions to take to improve their learning (Black & Wiliam, 1998b). Therefore, feedback which is too vague to pinpoint exactly what the teacher means, too reliant on academic language; biased; overly-judgmental; mere editing; uninformative; authoritarian; and harsh, may demotivate the students because these aspects of feedback have no value in addressing the students' learning problems (Ackerman & Gross, 2010; Mutch, 2003; Nicol, 2010). All these issues about giving feedback were taken into account in the preparation of the performance standards checklist rubrics to ensure that the feedback provided to the students would add value to their learning.

2.7 Peer feedback

In the present study, emphasis is placed on the implementation of peer feedback. Cartney (2010) claims that peer feedback is an emerging "new assessment culture" (p. 552) that engages students in deep/ mastery learning. Hence, it is important to examine the effectiveness of peer feedback in contributing towards learning in a East Asian CHC context, particularly in Singapore where both the practices of collectivism and competition are inherent.

Liu & Carless (2006) define peer feedback as an interactive process through which learners engage in dialogues associated with performance standards and assessment criteria. According to Topping (2009), peer feedback supports student learning by mapping out learning; recognising strengths and weaknesses; targeting areas for remediation; sharing of knowledge; and developing metacognitive skills such as collaboration, which are critical for preparing students for life and work (Cartney, 2010; Pellegrino & Hilton, 2012; Pollard & James, 2006). However,

teachers rarely incorporate peer feedback into their classroom learning activities, despite evidence which shows that active feedback networks and engagement lead to effective learning (Gielen, Peeters, et al., 2010).

2.7.1 Peer feedback in East Asian CHC classrooms

Understanding why peer feedback is not used in East Asian CHC classrooms has helped this research to focus on preparing teachers and students for their new roles in teaching and learning when conducting peer feedback lessons. In these new roles, teachers are prepared to be the facilitators of learning while the students are transformed from passive to active learners.

For this study, these issues will also be discussed during the Professional Learning Community (PLC) sessions with the teachers to understand why peer feedback is not widely used in East Asian CHC classrooms. Firstly, according to Bryant & Carless (2010), many East Asian CHC teachers believe that peer feedback is a "Western innovation" (p. 4) and not a suitable teaching pedagogy for the East Asian CHC classroom. Nelson & Carson (2006) state that the deep-seated Confucian culture of non-confrontation among East Asian students make peer feedback ineffective in improving learning. As peer feedback is a "public process" (Rubin, 2006, p. 389), students have the tendency to hold back from giving genuine feedback to their peers, if they feel that the feedback reflects poorly on their peers' academic ability and that it may threaten public harmony. In this type of Confucian culture, public disagreement must be avoided at all cost to avoid 'losing face' which is socially detrimental as the dignity and credibility of a person is affected (Wang & Wu, 2008). This has resulted in CHC teachers questioning the rationality of using peer feedback as it can threaten friendships among the students as well as classroom harmony (Mei & Yuan, 2010; Zhu & Mitchell, 2012).

According to Thanh (2011), the apprehensions of the teachers to adopt student-centred pedagogy, such as peer feedback, could also be due to the fear of losing face as peer feedback transforms the role of the teacher from a knowledge-giver to a facilitator of learning. As a facilitator of learning "who only intervene[s] when students need clarification" (Thanh, 2011, p. 521), the teacher is no longer central in the teaching and learning context. This disrupts the hierarchical order in the CHC classroom because CHC students are supposed to be "seen but not heard"

(Thompson, 2009, p. 672). Besides, East Asian CHC teachers are highly accountable for their students' achievements and the fear of losing assessment control at the expense of the students' grades, prevents the teacher from using peer feedback (Brown, Hui, Yu, & Kennedy, 2011; Harris & Brown, 2013). Hence, in the present study, assurance will be given often to the teachers, in particular, to encourage them to facilitate learning and to provide opportunities for the students to determine their own learning.

Secondly, according to Kim et al. (2010), teachers are worried that the feedback given by the students is not reliable and can distort the students' learning. This is due to the teachers' lack of trust in the competence of the students to provide reliable, honest, appropriate and meaningful feedback to their peers (Carless, 2013c; Ho & Savignon, 2007; Kaufman & Schunn, 2011; Nelson & Carson, 2006). In addition, the teachers feel that the students do not have the communication skills and the "willingness to share information, tell the truth, admit mistakes, give and receive feedback and speak with a good purpose" (Carless, 2013c, p. 9) to contribute to peer learning.

Thirdly, in a highly competitive learning environment (e.g. Singapore), peer feedback is said to be unsuitable because the AfL process values cooperation rather than competition among the students (Cestone, Levine, & Lane, 2008). Thus, when students are ranked and pitted against one another, collaborative work that encourages students to help one another in learning is considered to deprive the student who gives assistance of his/her future in terms of employment and educational opportunities (Mei & Yuan, 2010). As a result, students choose to remain silent and disengaged during peer feedback activities fearing that assisting their peers will place them in a disadvantaged position (Nicol, 2010). Hence, the present study also attempts to examine the reactions of students towards peer feedback activities, particularly whether it leads to low levels of enthusiasm and interaction, and social loafing, as predicted by Topping (2009) and Griesbaum and Gortz (2010).

Fourthly, in Confucian Asian cultures, there is a strong preference among the students to seek the teachers' feedback instead of that of peers (Bryant & Carless, 2010; Hedgcock & Lefkowitz, 1994; Hu & Lam, 2010). Teachers are seen as the only source and authority of learning and this belief has been embedded in the minds

of teachers and students for decades (Chiu, 2009; Ku & Lohr, 2003). Thus, to place the students "on par" (Thanh, 2011 p. 521) with the teacher during the peer feedback process is unacceptable as it is seen to be reducing the teacher's authority (Thanh, 2011). In addition, teachers are worried that using peer feedback may reflect on them as irresponsible teachers who have handed the teaching responsibilities over to their students (Allwright, 1979; Rubin, 2006).

In this study, the teachers are required to actively monitor the peer discussions to send a message to the students that peer feedback does not reduce the teachers' authority or responsibility, but merely redefines their roles in teaching and learning. Rubin's (2006) suggestion to assure students that peer feedback is meant to complement and not replace the teacher's authority was also taken into account to increase the students' receptiveness towards using peer feedback in the classroom.

2.7.2 Benefits of peer feedback

According to Vygotsky (1978), learning is a social construction and is "best understood in light of others within an individual's world" (Jones & Brader-Araje, 2002). This indicates that giving peer feedback improves the learning of students both when they explain and when they receive the explanations (Smith, 2009). Hence, the process of learning is not a monologue, or one-dimensional, but instead is 'dialogical' or a two-way communication process which involves teacher-student and peer-peer interactions and engagements (Black & Wiliam, 1998b; Bransford, et al., 1999; Nicol, 2010). When the students participate in peer feedback, they are given voice to scaffold, construct and share knowledge with their peers (Reynolds, 2009). This is undertaken during peer feedback discussions, when the students go 'back and forth' articulating and testing their knowledge which also increases their efficacy to perform (Harlen, 2006; Rubin, 2006). As students make decisions about whether to accept or reject their peers' feedback, they also experience a "complex repair" (Gielen, Peeters, et al., 2010, p. 306) process that requires them to assess their own learning (Kaufman & Schunn, 2011). By undergoing the self-repairing process first, instead of waiting for the teacher to correct the mistakes, positive learning is enhanced as students' engagement in self-regulatory thinking is increased (Lyster & Ranta, 2013; Tsang, 2004).

Therefore, to assist the students with their learning, summary sheets of the performance standards and the guiding questions are prepared in order to guide the students throughout the peer feedback process. These well-considered worksheets provided by the teacher participants allow the teachers to remain actively involved in their students' learning as they assist the students to achieve their learning goals in relation to the performance standards and assessment criteria set by the teachers.

According to Tsang (2004), feedback from teachers and peers provide different perspectives about student's work that can enrich the students' learning experiences. For example, reviews from peers are believed to provide more depth and breadth than the teachers' review since more valuable insights about expectations and performance standards are offered in relation to the student's work (Rubin, 2006). With various kinds of feedback given to students, they must evaluate the validity of the feedback received and modify their thinking and learning strategies to allow better thinking to develop (Glasersfeld, 1989; Juwah, 2004; Topping, 2009). This additional layer of the learning process reinforces the students' learning as it reaffirms the students' understanding of the knowledge learnt (Topping, 2003a).

In the present study, the feed forward process is not exclusively for the students to maximise their learning, but is also for the teachers to improve their teaching. This is because AfL will not work if the teachers are unable to change their classroom instruction to meet the needs of the students. Hence, the students' learning success or failure itself provides feedback for the teachers to modify their classroom instruction to help the students with their learning (Fisher & Frey, 2009; Huebner, 2009; Pratt, 2000). The use of the reflection booklet is intentionally introduced to inform the teacher participants of the students' learning progress and needs.

2.7.3 Teachers' role in peer feedback

For peer feedback to be implemented and sustained, the teachers' and students' roles in teaching and learning must be redefined and their concerns addressed. The present study aims to address these concerns by firstly assuring the teachers that they are not taking a back seat during teaching and learning (Everhard, 2011), but that they play a more active role in monitoring and guiding student learning compared to the teacher-talk lessons (Nicol & Macfarlane-Dick, 2006). Following Sadler's (1998) and Carless et al's (2011) call to induct students into the process of giving and

receiving peer feedback, the teacher participants are then taught how to train/ coach the students in various skills, such as cognitive (explanations, justification, decision-making), collaborative, interpersonal, communication, and listening skills. By doing so, the students' efficacy is increased as they ease their transition from passive to active learners (Cartney, 2010). To further assist the students to provide valid and reliable feedback, the teachers and students will be using the principles of assessment quality as a guide when giving peer feedback (Chappuis, Chappuis, & Stiggins, 2009):

1. Students (assessors/assessees) have a clear purpose why peer feedback is conducted (e.g. assisting peers to gain mastery of a sub-topic);
2. With a clear purpose, the students (assessors/assessees) are guided to have clear learning targets (e.g. having a clear understanding of what achievement looks like);
3. Avoid bias and keeping communication simple and focused on the learning; and
4. Students (assessors/assessees) taking ownership and responsibility towards their own learning (e.g. clarifying doubts in an active dialogue with the teacher and peers).

Even though the teacher's role has now shifted towards becoming an external reference point (or a resource) where the students seek assistance as they evaluate and self-correct their learning, the teacher is still the authoritative gatekeeper in teaching and learning (Cartney, 2010; Juwah, 2004). This is because the teacher still oversees the learning and is the final validator of student learning (Thompson, 2009), which will be emphasised to the student participants throughout Phase Three of the implementation stage.

2.7.4 Students' roles in peer feedback

When peer feedback is used in teaching and learning, students can no longer be passive learners but have to be active participants in their own learning engaging in giving, receiving and acting on the given feedback (Reynolds, 2009). Students must also be accountable to their peers when they give feedback (Rubin, 2006). Thus, having a trusting relationship among the students can help downplay validity and reliability issues that students might harbour over the given feedback (Pokorny & Pickford, 2010; Rubin, 2006). Hence, building an environment of trust and commitment that leads to the development of learning becomes essential (Nuthall, 1999).

For peer feedback to maximise student learning, teachers must often reinforce the message that the students must take personal ownership and responsibility towards their learning and that of their peers (Thompson, 2009; Topping, 2009). This means that during the peer feedback process, the students should do more than simply identify the strengths and weaknesses of the piece of work, but should also offer suggestions about how the work can be improved (Gielen, Peeters, et al., 2010). To help the students, worksheets are prepared by the teachers to assist them throughout the peer feedback process. At the same time, the students must also make independent decisions about their learning instead of relying on their teacher to do it for them (Rubin, 2006).

According to Webb & Jones (2009), it becomes important for students to understand the change in teaching and learning roles especially the division of labour when it comes to the assessment of learning. Through the intervention (such as providing students with training and coaching) and mediating the students' concerns, a change in classroom culture could be enabled that may just sustain the use of peer feedback.

2.7.5 Convincing students and teachers

A major barrier towards sustaining peer feedback is the perceptions of teachers and students of its effectiveness for improving learning (Topping, 2009). Hence, the present study aims to assure the students that peer feedback is not a replacement for the teachers' feedback but that it complements it (Rubin, 2006; Topping, 2009). Through the learning workshops, the students will be informed of the benefits of developing their abilities to arbitrate their learning based on their peers' feedback (Kim, et al., 2010; OECD, 2005; Saravanan, 2005). Also, both the teachers' and the students' concerns will be acknowledged and addressed throughout the different phases of the research through open discussions, particularly about the students' lack of experience of giving feedback that may affect the quality of the peer feedback. Thus, guiding the students in how to provide specific, descriptive and constructive feedback (Rubin, 2006) became the main strategy for convincing the students about the feasibility of engaging in peer feedback. Finally, the teachers needed to assure the students that they would monitor the peer feedback activity closely to ensure that learning took place and to provide a safe learning environment (Koka & Hein, 2006; Pokorny & Pickford, 2010; Rubin, 2006; Topping, 2009).

2.8 Sustaining AfL practices

According to Hayward & Spencer (2010), implementing AfL practices is far easier than sustaining them. This is true in a summative learning environment such as Singapore that uses extensively summative grades to certify, categorise and rank students at key transition points (Tan, 2011b). Such heavy emphasis on summative assessment to determine learning can be a potential barrier that prevents AfL strategies from being sustained (Berry, 2010, 2011a; OECD, 2005). However, the present study does not call for assessment of learning practices to be abandoned, but instead, to explore possible ways to strike a balance between AfL practices and assessment of learning. This is because in a successful education system, both assessment for, and of, learning are not to be seen as dichotomous, but need to be aligned to support effective learning (Berry, 2011a; Jenkins, 2010).

Using a systematic approach to coordinate and align the goals for learning with what is taught, how it is taught, and how it is assessed for effective learning (Bransford, et al., 1999) could show/ prove that integrating AfL practices in a summative setting can be achieved. Fisher & Frey (2009) also state that it is possible to use AfL as an avenue to inform instruction and to align practice to the national examinations. Furthermore, Ainsworth & Viegut (2006) state that through the use of AfL strategies, teachers can predict students' performance on the national examinations. However, if the teachers strongly believe that the education system is limited to grading and certifying students' learning success, then the way the teachers teach will be restricted to the assessment of learning methods, where the teachers become the "authoritative dispensers of knowledge" (Wolf & Bokhorst-Heng, 2008, p. 159) rather than facilitators of learning (Huebner, 2009). Hence, reviewing the assessment systems might help the teachers to re-examine the function of assessment in light of the aims of education.

2.8.1 Reviewing the assessment system

The 2005 OECD report states that an assessment system that constantly reviews and evaluates its own policy, design and processes has a better chance at promoting educational innovations and reforms, such as AfL practice for example. The report suggests that changes at the national level are possible if there is a bottom-up feed to

inform policy-makers of improvements that need to be made in the area of assessment. According to the OECD (2005),

> *policies that connect a range of well-aligned and thoughtfully developed assessments in the classroom, school and system levels will offer stakeholders with a better idea as to whether and to what extent they are achieving the objectives. Formative assessment, when applied at each level of the system, means that all education stakeholders are using assessment for learning.*

At the same time, policy-makers could "reframe assessment reform in a way that makes learning important" (Tan, 2011b, p. 85). According to Tan (2011b), assessment reform that is focused on the "epistemological value of learning" would "redirect assessment outcome from its regulatory features towards emphasizing learning features" (p. 85). To help bridge these bottom-up/ top-down feeds, researchers and academics can assist by providing their expertise on the feasibility of scaling up the implementation of AfL strategies and sustaining them (James, 2006; OECD, 2005).

2.8.2 Indigenising AfL strategies

As AfL is a Western construct, interpreting its practice in the East Asian CHC context could be a key to sustaining AfL. Hence, there is a need to 'indigenise' AfL practices into curriculum design for local needs (Carless, 2011; Carless & Lam, 2014; Kennedy, et al., 2008). If AfL strategies are tailored to suit Singapore's summative context and bring about positive academic results, this may increase the possibility of teachers and students using AfL continuously. However, the call to indigenise AfL practices also involves changing the following areas, as suggested by the OECD (2005):

1. Changing the way teachers believe in how students' learn and how they interact with students;
2. Changing the learning environment, particularly how teachers teach and guide students to attain their learning goals;
3. Reviewing how learning success is defined and the role of teachers/ students in the learning process; and
4. Setting up a safe learning culture where making mistakes are part of the learning process.

2.8.3 Training

For AfL strategies to be sustained, teachers must be well-trained and have an in-depth knowledge about the principles of sound assessment practice (Hayward &

Spencer, 2010; Stiggins, 2005a). For a start, teachers' pre-service programmes need to incorporate AfL strategies so that beginning teachers can integrate AfL strategies as part of their teaching instruction in the early stage of their careers (Bennett, 2009; Sadler, 1998; Stiggins, 2002). Stiggins (2002) proposes the need to move away from pre-service teacher training that narrowly teaches how to set and administer examination papers; score and interpret assessment results; connect these results with certain decisions; assign grades appropriately; and communicate about student achievements.

According to Bennett (2009), assessment literacy training must assist teachers to understand cognitive theory: what to look for in student performance; what inferences can be made based on their performance; and which actions to take to alter classroom instruction. When teachers are well-equipped with such knowledge, they can then relate positive outcomes that have occurred in their classrooms to the established AfL learning theory which improves the possibility of AfL being sustained (Hayward & Spencer, 2010).

2.8.4 Professional Learning Communities (PLCs)

PLCs are an important learning platform at Fairmont Secondary School that provides the teachers with the time and opportunity to collaborate with the aim of improving student learning and achievement. Hargreaves (2007), and Anderson & Herr (2011) state that the structures, support, cultures and leadership of the PLCs could possibly create changes in teaching and learning as the changes emerge from the bottom-up instead of via a rigid top-down approach. This is because PLCs allow teachers to experiment with new teaching initiatives, such as AfL, without having the fear of being reprimanded if the experiment fails to achieve its aim (Jenkins, 2010). Hence, in the present study, the teachers are provided with the time to plan, implement, and discuss AfL practices and reflect on the outcomes of the AfL experimentation during the PLC sessions. However, Hargreaves cautions that there is a danger of the PLCs being "fixated on raising tested achievement scores" (2007, p. 185), thus in the present study, attention is given to improving teaching and learning pedagogy and equipping teachers with deep and broad learning about AfL practices beyond the basics. According to Harris & Jones (2010), when PLCs are well-constructed, it can assist in "system-wide improvement" (p. 180), which means that

there is a high possibility that AfL practices can be sustained if teachers are seriously engaged during the PLC sessions.

2.8.5 School leaders

According to Stiggins (2005b) and Wiggins (2004), if everyday classroom assessment processes and approaches are transformed into a central tool for teaching and learning in the school, AfL practice will have a higher possibility of being sustained. For AfL to be sustained in schools, school leaders must be grounded in assessment theories and methods to balance the use of assessments for, and of, learning (Stiggins, 2002). A whole-of-school decision to cut down on the number of summative tests will lead to the diversion of resources to develop AfL strategy lessons that will benefit the students' learning development (Jenkins, 2010; Stiggins, 2002). Hence, a whole-of-school approach to using AfL strategies as part of the everyday teaching and learning routine will eventually change the teaching and learning culture and have a higher chance of AfL being sustained (Ng, 2006; Sadler, 1998). A report by the OECD (2005) states that a whole-of-school approach to implementing AfL strategies can ensure coherence and consistency between assessment policy, the school and the classroom that increase the possibility of AfL as a new culture of learning to be sustained. Thus, school leaders will be updated on the progress, development and achievements of the present study so that informed decisions can be made on whether to use AfL pedagogy as a whole-of-school approach in teaching and learning.

2.9 Concluding remarks

Much of the literature on AfL has centred on the benefits and outcomes of AfL to improve learning. Much of the literature about AfL practices, such as implementation, impact and challenges, has centred on the experiences of teachers. There has been less attention to the students' voice, including their concerns and experiences when using AfL practices. Importantly, there is also limited evidence on students as self-directed learners arising from the implementation of AfL strategies, especially in East Asian CHC context. Furthermore, a substantial section of the literature about AfL has focused on its use at the tertiary level with less at the upper secondary level.

Furthermore, most of the research on AfL has been situated within the Western-oriented pedagogical context and not in CHC type of learning environments, such as Singapore. Hong Kong seems to be the only CHC country that has implemented AfL as part of its teaching and learning practice. A lot has been learnt from Hong Kong's experience of implementing AfL, which has helped to refine the direction of the present study. A major difference between the present study and Hong Kong's AfL implementation is that this study attempts to implement and sustain AfL practices in an elitist education system (Caleon & Subramaniam, 2008), as compared to Hong Kong's 'no loser principle' ideology in education (Kember & Watkins, 2010). The present research was undertaken against a background in which no concession was made to reduce the teachers' workload, reduce the number of students per class, reduce the summative test quota, or to adjust the timeframe for the syllabus to be completed. The context for the present study is unlike Hong Kong, where a sector-wide education reform process was undertaken in 2000 to accommodate AfL practices into its teaching and learning pedagogy, curriculum and assessment system. Important changes to support AfL were also made in Hong Kong, such as secondary education being made universal, less focus on test scores for tertiary admission, and students sitting for only one national examination at the age of 18 (Cheng, 2009). Even though Singapore had her primary and secondary education systems reviewed in 2010, Singaporean students still need to sit for the national examinations at the ages of 12, 16 and 18 years, because summative assessment still plays an important role for placement and ability-tracking purposes (Lim, 2013). In addition, in Singapore there were no recommendations made to integrate AfL practices into secondary education in the 2010 secondary education review (Ministry of Education, 2010).

The main aim of the present study is the investigation of an attempt to implement, integrate and sustain AfL practices in a summative context where limited provision was made by the school to accommodate the integration of AfL practices. The research also examines changes to teaching and learning associated with the implementation of AfL strategies as well as possible improvements in the GCE O' level grades following the experience of AfL. Finally, the present study investigates the perspectives of both the teachers and the students (using the mixed methods approach) about their experiences of using AfL. The emphasis is on peer feedback,

students as self-regulated learners, performance standards, and students and teachers working together. The research also adds to the existing literature by investigating issues associated with sustaining AfL practices in a summative context. In the following chapter, the design of this study will be described, including the methods of data collection and analysis, as well as the methodology that underpins the research.

3.1 Scope of chapter

This chapter outlines the background assumptions and influences that underpin the methodology used in this research. It explains the purpose of the research and why a qualitative-driven mixed method design, with a pragmatic approach, was selected. This is followed by the rationale for using the mixed methods approach as a core strategy in the research. In addition, the chapter explains why the case study method was used and why the present study could be considered as having the qualities of an insider research.

3.2 Research purpose

The broad purpose of the research is to investigate the possibility of implementing and sustaining Assessment for Learning (AfL) strategies, as well as establishing the viability of integrating AfL and assessment of learning in a secondary school in Singapore (Fairmont). An associated purpose is to consider the implications of the results in the context of the Singapore education system. In order to provide clarity of purpose, the research was divided into four chronological phases, where each phase answered one of the following four research questions:

1. What are the current beliefs and practices around assessment and feedback in the school?

2. What are the outcomes of an intervention to increase AfL practices?

   a. What evidence is there for changes in teachers' teaching and students' learning beliefs, attitudes and behaviours following the intervention to increase AfL practices?
   b. Were there improvements in student learning processes/ strategies, in associated with the intervention, in terms of the students becoming more self-regulated in their learning?
   c. What factors may have contributed to the improvements outlined in (b)?

3. What are the challenges for sustaining AfL and which strategies might be the most effective to sustain AfL?

4. Might AfL strategies have contributed to improved high stakes assessment results?

The research purpose and questions were designed to differentiate between factors contributing to existing beliefs and practices and the effects of the

intervention and implementation of AfL as part of classroom instruction. The development and transformation of the participants' beliefs, attitudes and behaviours towards AfL strategies, such as self-regulated learning, peer feedback, and quality written feedback, were analysed. In addition, an examination of how teachers' involvement in professional learning could have had an impact on their teaching practice was explored.

3.3 Ontology and epistemology

The following section describes the rationale for the paradigm and methodological approach adopted to guide the research so that the evidence collected "might be understood, patterned, reasoned and compiled" (Morrison, 2012, p. 16). According to Cohen & Manion (2007), ontological assumptions "concern the very nature or essence of the social phenomena being investigated" (p. 7). In this research, the ontological assumptions were grounded on my pragmatist position and experience as a teacher, and subsequently as a researcher exploring a "local knowledge case" (Thomas, 2011, p. 76). The teacher participants and I were actively involved in practice-based research. Throughout the research, we acquired and improved various concepts of teaching and learning by critically reflecting on our own educational work (Hiim, 2011).

As explained by Guba & Lincoln (1994), ontology always influences epistemology, which is concerned with the nature, structure, attainment, communication and transfer of knowledge (Cohen & Manion, 2007). My values, along with my knowledge of the political, historical and cultural foundation of what constitutes 'good teaching and learning' at Fairmont, defined who I am, how I acted and what I thought was noteworthy to research (Morgan, 2007; Packer & Goicoechea, 2000; Tashakkori & Teddlie, 1998). As a teacher-cum-researcher, it is necessary to conduct research on my own professional practice to "develop relevant concepts rooted in occupational experience … [to] support the authority of the teaching profession" (Hiim, 2011, p. 22). With this in mind, it is only appropriate to state that this research is conceived from, and based on, my "own personal and critical reflection" (Badley, 2003, p. 301) of my teaching experience. For example, the selection of AfL practice as my research area, stemmed from my value system and personal experience as a teacher who inspires students to be self-directed learners capable of contributing actively towards excellence.

It is acknowledged that theory is important as a guide for any research. However, in this research, emphasis on a "practical plan of action" (Purgur & Buck, 2009) to create educational knowledge through the "process of inquiry" (Badley, 2003, p. 307) was taken. It was far more important to develop and improve on existing practices and to share the participants' views and understandings related to the implemented intervention that they had experienced. This was because bridging from theory into practice was far more relevant than developing abstract concepts that may not have been understood by the teachers at Fairmont (Hiim, 2011).

Basically, this research was conducted "in anticipation of results that [were] congruent with [my] value system, including variables and units of analysis" (Tashakkori & Teddlie, 1998, p. 27). So, for my plan of action to succeed, working collaboratively with the teacher and student participants (Onwuegbuzie & Leech, 2005) was vital, particularly the teachers, as their roles and contributions towards the construction of knowledge must be recognised (Badley, 2003). Thus, the participants and I were actively involved in the "interpretation of meaning, the reflection of experience and the reconstruction of the experience to become more knowing" (Garbett, 2011, pp. 37-38) of the issue. In this research, it was only appropriate that meanings were shared and that joint actions were taken between the participants and I so that an understanding of the actual behaviour of the participants, their beliefs that represented these behaviours, and the outcomes expected from these different behaviours, could be forged and understood (Morgan, 2007). This "meaning giving" (Blaikie, 2007, p. 17) was done throughout the intervention and implementation phases of the AfL strategies to improve the students' learning. This process was valuable as I learnt to revise and reconstruct meaning (Naylor & Keogh, 1999) as I encountered new experiences to understand the reality within the "shared interpretations that [the participants and I] produce[d] and reproduce[d]" (Blaikie, 2007, p. 17) during the research.

In this research, working closely with the teachers to improve the design of the AfL activities and materials was important. The teacher participants selected three activities (peer feedback, self-regulated learning and performance standards checklist rubrics) as the areas that they believed would improve teaching and learning. Throughout the entire process of change (i.e. the introduction, intervention and implementation of the AfL strategies), the teachers were guided. For example, the

design of the peer feedback activities and performance standards checklist rubrics were constantly reviewed, revamped and improved from the feedback provided by the teacher participants during weekly discussion meetings. What has been found to work in terms of enhancing student learning within the classroom environment has emerged from the students' learning needs and the teachers' experiences and personalities. Indeed, the pragmatic approach was considered as the most practical paradigm to be used in this research.

3.4 Mixed method approach

In this section, the rationale of why the mixed methods design was selected is explained, and in particular, how the mixed methods model influenced the research procedures and the inferences that emerged. The mixed methods design is commonly considered to be the philosophical companion to the pragmatic approach. Factors that influenced the decision to use a mixed methods design included the ontological and epistemological framework, the research questions, and the data collection and analysis methods.

In the current research, the pragmatic explanatory sequential mixed methods approach (Cameron, 2009; Creswell & Plano Clark, 2007) was selected. In this approach, the phases of the research transpire in a consecutive series with one type of data informing and influencing the collection of another type of data in the successive phases (Cronholm & Hjalmarsson, 2011; Sharp et al., 2012). In addition, the choice of the research processes employed and the research questions addressed in one phase similarly hinges on the preceding phase (Klassen, Creswell, Plano Clark, Smith, & Meissner, 2012).

Consequently, as a pragmatic researcher, engaging and using philosophical inquiry as a tool to address and answer the research questions was the main priority throughout the research (Biesta, 2010; Teddlie & Tashakkori, 2012). Thus, relying on either a quantitative or qualitative method was insufficient to explain the intricate and complex "social world" at Fairmont (Creswell & Garrett, 2008; Guba & Lincoln, 2005). Hence, the mixed methods design was seen as suitable, as it allowed an array of "multiple viewpoints, perspectives, positions and standpoints" (Johnson, Onwuegbuzie, & Turner, 2007 , p. 113) for a comprehensive analysis of the research issues.

According to Teddlie and Tashakkori (2010), the "bottom-up" (p. 16) approach in the mixed methods design is a practical way to answer research questions as it eventually drives the research procedures. Here, the bottom-up approach took into account a combination of ideas arising from the literature, the teacher and student participants, and the researcher, to improve the intervention procedures to fit the teaching and learning needs at Fairmont (Chen, 2010). This ensured that the interventions were clear-cut and feasible for all teacher and student participants to engage productively in the teaching and learning (Chen, 2010).

In this research, I adopted Creswell's view (2010) that mixed methods is primarily seen as a "method approach" (p. 51). In this approach, focus and emphasis are placed on collecting, integrating and analysing both the statistical and qualitative data (Creswell & Plano Clark, 2007; Johnson, et al., 2007). These data were subsequently analysed using the pragmatic approach (Creswell & Plano Clark, 2007; Creswell & Tashakkori, 2007; Evans, Coon, & Ume, 2011) for a deeper understanding of the outcomes of the research. The positive outcomes from using this approach include a better ability to handle threats towards validity, deeper, more meaningful and constructive answers to the research questions, and greater confidence about the conclusions (Johnson, et al., 2007).

Furthermore, the mixed methods design was useful for allowing the utilisation of the qualitative data to inform and nourish the quantitative data and vice versa (Badley, 2003; Onwuegbuzie & Leech, 2005). For example, the use of quantitative data (from the survey) was useful for understanding the general perceptions of the teaching and learning situation from the students' standpoint in a short period of time (Kelley, Clark, Brown, & Sitzia, 2003). From these findings, directions for what were needed to be pursued during the qualitative data collection phase (interviews and focus group discussions) were developed. As a result, in-depth information, nuances, and details of the participants' beliefs, attitudes and behaviours towards using AfL were captured (Cameron, 2009; Matveev, 2002). Therefore, the integration of the quantitative and qualitative data was beneficial to crosscheck and complement one information source with the other (Cameron, 2009; Spratt, Walker, & Robinson, 2004; Teddlie & Tashakkori, 2010). This allowed the qualitative data to facilitate the explanation of the relationships revealed in the quantitative data. On the

other hand, the quantitative data compensated for the shortcomings of the qualitative data which were difficult to generalise (Evans, et al., 2011; Onwuegbuzie & Leech, 2005).

In addition, a mixed methods design is said to "produce a more robust measure of association while explicitly valuing the depth of the experiences, perspectives and histories of [the] research participants" (Wheeldon, 2010, p. 88). Hence, respect was given to the participants by acknowledging their individuality, and their own interpretations and understandings of the world (Morgan, 2007). An effort was also made to acquire a comprehensive understanding of the environment of the teacher and student participants through deep immersion into their cultures (Thomas, 2011). I assumed the role of a social inquirer (Greene, 2008; Thomas, 2011) to attain 'soft' knowledge which was embedded in the teacher participants' teaching practice such as tacit knowledge, social knowledge, and knowledge produced from internalised experiences, to facilitate my understanding of the challenges the participants' faced toward changing their teaching and learning practices (Hildreth & Kimble, 2002; James, 2007).

Meanwhile, 'hard' data that offered possible explanations for the cause-effect relationships, were obtained from surveys, interviews and focus group discussions (Spratt, et al., 2004). This was beneficial during the process of "abductive-intersubjectivity-transferability" (Evans, et al., 2011p. 277) reasoning which allowed for provisional justifications and hypotheses to emerge based on my knowledge and insight of the issues as they emerged. Through this iterative approach, these tentative explanations were tested both theoretically and empirically. As Morgan (2007) suggests, by moving "back and forth" (p. 72) in a non-linear research pathway (Cameron, 2009) between induction and deduction, observations can be translated into theories and, subsequently, these theories can then be evaluated through actions (Teddlie & Tashakkori, 2010).

The advantage of this process is that it produces a rich interpretation of "shared meaning" (Wheeldon, 2010, p. 89) within the antecedent actions. According to Unger (2008), meaning is understood through interpretation of the actions taken where the focus would be on these "meaning-bearing situations, in which actions and behaviours have meaning for people participating in different intersubjective

domains" (p. 4). This means that the creation of knowledge was accomplished through social processes such as joint consensus and actions between the participants and the researcher on aspects such as teaching objectives, teaching materials, and the procedures to be followed in the peer feedback lessons (Morgan, 2007).

Meanwhile, inference transferability signifies to what extent the research conclusion can be applied to "other settings, individuals [or] time periods" (Tashakkori & Teddlie, 2010, p. 813). Transferability is an important element in research especially when constructing a body of knowledge or testing the robustness of knowledge through replication (Chow & Ruecker, 2006). According to Chow & Rucker (2006), even though such knowledge cannot necessarily be generalised, it can still be disseminated and used by other researchers. In this case, knowledge of the research design (as a mode of productive knowledge) can be used by researchers to anticipate issues that may occur when the knowledge is applied in other settings (Rumsey & Harcourt, 2012).

Creswell & Plano Clark (2007) state that the iterative explanatory sequential mixed methods design can also offer an interpretation and understanding of the research issues. In the research, the quantitative data were collected first and analysed, followed by the qualitative data, which function as a support in providing in-depth detail to further understand the quantitative results (Creswell & Plano Clark, 2007; Klassen, et al., 2012). This design was suitable since the quantitative survey provided the opportunity for "statistically significant differences and anomalous results" (Creswell & Plano Clark, 2007 , p. 72) to be further investigated with an in-depth qualitative study to clarify why these differences and outcomes occurred. Besides, the iterative explanatory sequential mixed methods was deemed to be manageable to conduct, as the separate multi-phases allowed one type of data to be collected at a time. Furthermore, the final report was written in separate phases which made it easier to provide a distinct and clear-cut explanation for the readers (Creswell & Plano Clark, 2007).

3.5 Case study approach and rationale

This section describes the case study approach followed by an account of the reasons for using this method.

A case study approach is "an intensive study of a single unit for the purpose of understanding a larger class of (similar) units" (Gerring, 2004, p. 342). This single unit could represent a school, group, or person studied holistically over a period of time (Yin, 2008). A case study approach is also excellent for discussing issues through a comprehensive examination of a single case by assuming that one can appropriately acquire knowledge and information of the phenomenon through a thorough investigation of that single case (Fidel, 1984; Thomas, 2011; Yin, 2013). In this study, the explanatory case study approach was selected to explore causation and interactions, especially from an extensive range of variables for a more complete understanding of the present research (Yin, 2008).

In this study, the Secondary Three Express Social Studies teachers and students at Fairmont Secondary School (Fairmont) represents the holistic single case. This is possible because the underlying research is concerned with effective teaching and learning practice (Blaikie, 2009). However, it would be too simplistic to analyse this single case without taking into account the different variables influencing the case. There is also a need to be mindful that the case study and the participants in this research are embedded in the context of the Ministry of Education's assessment policy, Fairmont's teaching and learning culture, and the teachers' and students' perceptions towards pedagogical change. All these variables influence the teacher and student participants' decisions about whether to use AfL strategies in their teaching and learning practice (Baxter & Jack, 2008). By analysing these variables (within, between and across the analysis) and linking them to the global issue that is initially decided upon (in this study, the global issue is to determine whether AfL improves teaching and learning at Fairmont), a rich explanation of the causal relations may lead to a more accurate understanding of the case (Yin, 2003).

In order "to demonstrate a causal argument about how general social forces take shape" (Walton, 1992, p. 122), an analysis of the following is important: whether and why AfL improves teaching and learning; what AfL does to teachers and students to improve teaching and learning; and how AfL might change teaching and learning practice. Consequently, by analysing these causal relations, a model of implementation and sustainability can be created for Fairmont. Hence, the explanatory case study approach (Yin, 2003, 2013), where various data sources are used to assess a phenomenon, is an appropriate choice of design (Baxter & Jack,

2008). Moreover, the explanatory case study approach guarantees that the issue explored is investigated using different lenses "which allows for multiple facets of the phenomenon to be revealed and understood" (Baxter & Jack, 2008, p. 544; Yin, 2013).

Another positive aspect of using an explanatory case study approach is its rigour and versatility. According to Becker (1977), the explanatory case study approach covers any pitfalls that can occur during the planning procedure by offering evidence to dig deeper and develop the hypotheses. This in-built mechanism protects the researcher from being inflexible when conducting her research (Becker, 1977).

Using the explanatory case study approach could also help to develop the theoretical perspective, such as why educational practice at Fairmont is geared towards assessment of learning. This is because, through the case study design, not only is it possible to focus on single learning variables during the investigation, but also to understand and interpret these variables in a wider context (Gomm, Hammersley, & Foster, 2000). For example, the reason why assessment of learning practice is heavily used could be linked to the teacher participants' varying degrees of knowledge of effective teaching and learning which is more inclined towards a surface approach to learning (Holmes, Cooper, & Ho, 2004), being typical of practice in East Asian CHC countries such as Singapore. Thus, the cultural and social perceptions of effective teaching and learning are examples of the wider context that needs to be further investigated to understand why assessment of learning remains the main choice of teaching practice.

In order to be aware of the totality of the wider context and to keep this research manageable, Hammersley & Gomm (2000) suggest a focus on causal conditions, where the elements that influence the primary phenomenon are examined. According to Patton (2001), this would reduce the "large amount of data to broad patterns" (p. 492). These patterns can then be evaluated through process tracing or rigorous and in-depth analysis of the data, making the case study more easily understood.

According to Hiim (2011), the case study approach "clarifies essential tasks in teacher work, how the work is carried out and how it is experienced" (p. 22) which are essential pieces of information to be considered during the planning, implementation and reviewing of AfL practice. As a result, I was able to experience

the real-life context from the perspective of the participants and, in particular, their concerns and anxieties when integrating AfL strategies into their teaching and learning practice (Gall, Gall, & Borg, 2007; Yin, 2003). Through the process of empathetic understanding, various lenses could be used to understand the teacher and student participants' emotions, especially their struggles to change their teaching and learning habits. This has been useful in bringing to life the learning and research methodology (Flyvbjerg, 2011; Lincoln & Guba, 2000; Sturman, 1999).

A possible limitation of the case study approach pertains to the issue of generalizability (Stake, 2000; Yin, 2003). According to Hammersley & Gomm, a case study "facilitates the transfer of findings from one setting to another on the basis of fit" (p. 5) and should not be used for statistical generalisation (Yin, 2003). Similarly, Stake uses the term "naturalistic generalisation" (Stake, 2000, p. 22) to explain how using and relating the findings from one study to a similar situation could assist in broadening the understanding of the issue. Hence, this AfL research has good potential to be compared in the context of other regional or international research based on fit or "natural covariations of happenings" (Stake, 2000, p. 22), so that a 'larger' conclusion can be drawn from it.

Meanwhile, Yin (2003) uses the term "analytical generalisation" (p. 37) to generalise the results to expand the theory so that it might have much wider-ranging applicability. This would result in the outcomes of this research being more useful in informing and supporting a broader theory, such as practice-based theory, that could address inadequate professional development efforts in supporting teachers to adopt AfL strategies (Yin, 2003). This could be achieved by replicating the research under the same setting to ensure reliability and generalizability, then if the setting differs but produces similar results, the replication may demonstrate the robustness of the results (Crosthwaite, MacLeod, & Malcolm, 1997; Firestone, 1993). Hence, it is appropriate to say that using the explanatory case study method "proliferates rather than narrows" this research (Donmoyer, 2000; Stake, 2000, p. 24).

In conclusion, even though this study is bounded by the design and focus of the research (Stake, 2005), and the structures within Fairmont and the Singapore education system, the explanatory case study design can provide a gateway to the possibility of changing assessment systems (for example, in Social Studies, Fairmont

and Singapore). The explanatory case study design is "a comprehensive research strategy" (Yin, 2003, p. 14) that allows a realistic response from the research participants and thus may lead to the discovery of new and unexpected results.

3.6 The insider researcher

This section defines insider research and why the present study could be considered as having these qualities. This will be followed by an explanation of the advantages and limitations of insider-led research, and how it is helpful to consider the present study in relation to the notion of insider research.

The term 'insider research' is used when the researcher carries out studies "with populations, communities, and identity groups of which they are also members" (Kanuha, 2000, p. 439). Insider researchers are also closely involved with their research fields as they share the distinctiveness, common experience, values, norms and understandings of the culture and history of the school, thus gaining trust from the research participants (Chavez, 2008; Costley, Elliott, & Gibbs, 2010; Rooney, 2005). As a result, an insider researcher is seen as a "legitimate community member who can speak with authority" (Chavez, 2008, p. 475) and validity about the school's teaching and learning culture, principles and viewpoints (Edwards, 2002). In contrast, outsider research is led by researchers who briefly enter the school only for the duration of the study and are only part of the school community in order to complete the research (Brannick & Coghlan, 2007; Drew, 2006). This present study fits well with the definition of outsider research, however because of my teaching and leadership background in the school, I also have elements of being an insider.

In this current study, I have recognised that on a few occasions I have felt that I am an insider, sharing anecdotes and perspectives as I work together with the participants while, at other times, I have felt somewhat marginalised like an outsider (Dwyer & Buckle, 2009). As long as I was not part of the teaching and learning routine of the participants, I was seen as an outsider holding more power in terms of equity, even though I had been part of the school community for the past ten years. Corbin, Dwyer & Buckle (2009) state that being part of the community does not necessarily mean being accepted automatically into the community and labelling oneself as an insider may not signify similarity to the community either. Hence, my research tasks and the power inequities in the relationships between myself and the

teachers and students (Hewitt-Taylor, 2002), played a crucial role in determining my 'fluid' positionality as an insider or outsider researcher (Chavez, 2008).

Regardless of whether a researcher is labelled as an insider or outsider, there are benefits to be gained and limitations to be aware of. Breen (2007) and Costley (2010) identify several benefits of being an insider researcher. For example, since the researcher is known to the school, "access and legitimacy" (Chavez, 2008, p. 482) were given instantaneously since rapport building had already been established by association (Brannick & Coghlan, 2007; Unluer, 2012). The "continuity of data collection" (Unluer, 2012, p. 5) also leads to more enriched, detailed and trustworthy research data. For an outsider researching in a school, primary data access might be difficult to gain and, at times, may even be denied (Hewitt-Taylor, 2002).

Another major advantage of insider research is the established rapport between the researcher and the participants which leads to trust (Edwards, 2002). It also allows for exploration and adjustments to be made on current educational practice based on a researcher-participant learning partnership (Asselin, 2003). In addition, the researcher's ability to use the insider language (Taylor, 2011; Unluer, 2012) helps her to further understand "the nature of the situation being studied" (Hewitt-Taylor, 2002, p. 33) and emphasises her commonality with the participants (Edwards, 2002).

Since the insider researcher has an "insight into the linguistic, cognitive, emotional, sensory and psychological principles of the participants" (Chavez, 2008, p. 479), such pre-understanding also aids the researcher in detecting the teacher and student participants' genuine behaviours as opposed to an artificial portrayal of their performed selves (Brannick & Coghlan, 2007; Chavez, 2008). The ability to identify blatant pretence and deception could reinforce data validity which may take an outsider researcher a long time to acquire (Edwards, 2002; Unluer, 2012).

According to Brannick & Coghlan (2007), insider research falls short of meeting the benchmark of intellectual rigour due to the considerable emotional connection involved during the research which may prevent the researcher from remaining objective during the data analysis process (Asselin, 2003; Breen, 2007). As a result, the researcher could be seen as being biased or myopic (Darra, 2008; Ehrlinger, Gilovich, & Ross, 2005) as she could have a "vested interest in certain results"

(Costley, et al., 2010, p. 6). Furthermore, others may consider that, due to her competence, enthusiasm and ingenuity in handling difficult situations, these might play a major role in determining the success of the research instead of other factors that may be overlooked (Costley, et al., 2010).

However, through the process of "epistemic reflexivity" (Brannick & Coghlan, 2007, p. 60) and continuous critical self-reflection (Chavez, 2008), the researcher can remain objective especially during data analysis (Asselin, 2003; Kanuha, 2000). All these steps allow the insider researcher to stay mindful of her own prior knowledge thus helping her to avoid making erroneous assumptions (Asselin, 2003; Chavez, 2008). Concurrently, "member checks" (Belk, 2008, p. 136) can be used to ensure validity of the findings which fulfils ethical obligations, particularly in ensuring non-maleficence (Breen, 2007; Thomas, Blacksmith, & Reno, 2000).

In conclusion, even though I consider myself to be an insider researcher to some degree, my teacher and student participants may view me as an outsider. However, according to Ellis & Bochner (2000, (cited in Breen, 2007)), all researchers can eventually become insiders due to their communication and involvement with the participants. Besides, both the insider and outsider researchers still need to "contend with similar methodological issues around positionality, a researcher's sense of self and the situated knowledge she possesses as a result of her location in the social order" (Chavez, 2008, p. 474). Chavez (2008) explains that there is no guarantee that the outsider researchers' observations, analysis and illustration are not influenced by their biases such as their principles, beliefs and values. As a researcher, as long as she is able to immerse herself into the research domain and remain objective and unbiased as far as possible, whether she is an insider or outsider researcher may not matter.

3.7 Concluding remarks

This chapter has outlined the purpose of the research, a justification for the paradigm and the methodological approach used, and the rationale for using the mixed methods design and case study approach. In addition, the issue of the present study being considered as having some of the qualities of insider research was explained.

Chapter 4 Research Methods I:
Context & Initial Stages

4.1 Scope of the chapter

In this chapter, an overview of the selection of the site, the recruitment of participants, and the actions taken to seek permission to collect the data are illustrated, along with a description of the data source and the data collection processes. The chapter concludes with an explanation of the ethical considerations, followed by an exploration of the validity of the research.

4.2 The site of the research

This short-term longitudinal study was conducted in Singapore at Fairmont School over a period of 15 months. Fairmont offers either Express, Normal (Academic) or Normal (Technical) courses designed by the Ministry of Education to cater to the students' diverse interests and academic abilities (Ministry of Education, 2012). Six of the 86 teachers teach the Social Studies subject. All students (with the exception of Normal Technical) sit for the Singapore-Cambridge General Certificate of Education (Ordinary Level) or GCE O' level examination at the end of their secondary education.

4.3 Rationale for choosing Fairmont

The Principal described Fairmont's brand of education as "one that is authentic, student-centric and future-oriented for today's readiness and future challenges" (Fairmont, 2013). This fits quite well with the characteristics of AfL practice where "learners and learning become the core of educational practice" (Bolstad et al., 2012, p. 40). With the school's strong focus on student-centred learning, I approached the Principal to express an interest in collaborating with the Social Studies teachers to implement AfL practice. As the Principal was also keen to explore new teaching and learning practices that could potentially enhance the students' learning and the teachers' professional development, I was allowed to conduct the research in the school. This win-win situation was considered ideal in creating a synergistic working relationship that could potentially benefit everyone involved in the present research (Hinkin, Holtom, & Klag, 2007).

According to Walford (2001), accessing research sites like schools can be a challenge. To avoid the possibly opportunistic selection of the research site based on easy access or convenience (Benbasat, Goldstein, & Mead, 1987; Walford, 2001), attempts were made to invite four schools to be part of this present research. However, none of the schools approached responded to these invitations except for Fairmont. In view of the possibility "that without access [the present] research was not possible" (Denscombe, 2009, p. 45), it was decided to select Fairmont as the research site, despite the researcher having been an 'insider' at the school for over ten years. It was felt that being familiar with the setting was useful in providing a clear idea of my own aims, rationales and actions taken (Blakemore, 2012).

4.4 The Social Studies subject

Combined Humanities is a compulsory subject taken by all students. Combined Humanities consists of the subject Social Studies which must be taken with one of the following electives – Geography, History or Literature. Before sitting for the GCE O' level national examinations, students must complete a two-year Social Studies course taken at the upper secondary level. The Social Studies course learning outcomes were measured relative to knowledge, skills, values and attitudes (Board, 2012; Ho, 2009). For students who were planning to pursue their education in the pre-tertiary institutions, the Combined Humanities grade makes up part of the tabulation for the admission and thus, becomes an essential subject for the students in which to excel.

4.5 The participants

In this section, the sampling procedures are described and justified followed by a description of the participants. All participants were given pseudonyms to protect their identities.

4.5.1 Background of student participants

All students from the Secondary Three Express Social Studies cohort were invited to take part in the research. The decision to invite all Secondary Three Express students was mainly to avoid selecting participants that may have been based on the researcher's bias (Chavez, 2008). Restricting the range of participants

could also limit the possibility of having more information being shared (Brannick & Coghlan, 2007).

The Secondary Three Express stream Social Studies students selected for the research were considered to have higher academic abilities (Koh & Luke, 2009; Mok, 2005) compared to the Normal Academic and Technical students. According to Fairmont, these students were placed in classes based on their subject combinations rather than by their academic ability. Hence, all the classes have a good mixture of students with diverse abilities. However, according to several Secondary Three Express students, they felt that students from classes 3Y and 3W were academically better since the majority of the students took more GCE O' level subjects, such as triple Science (Biology, Physics, Chemistry) compared to class 3S or 3X. The selection criteria for the triple Science classes (3W/3Y) also showed that the students in these classes obtained 75% or higher in their Science and Mathematics subjects, compared to the 3S and 3X students. Classes 3X, 3S, 3W and 3Y refer to the four classes involved in the research. The letter 'Y', 'S', 'X' and 'W' indicates the first letter of the names of the classes Social Studies teachers: Yasmin (3Y); Wanda (3W), Xena (3X) and Suzie (3S).

4.5.2 Recruitment process

The student participants from classes 3S, 3X, 3W and 3Y were recruited via their Social Studies teachers. The teachers, with the assistance of the researcher, explained the purpose and procedures of the research and gave each student a letter of introduction, an information sheet, and a parent/ child consent form for child participation in the research (see Appendix A). In order to be part of the research, both parent/ guardian and the child had to give their consent before taking part. All consent forms with the parents' and students' approvals were collected within a week of the commencement of the fieldwork.

4.5.3 Rationale for the recruitment of Secondary Three Express Social Studies students

The Secondary Three Express Social Studies students were selected mainly because the data collection process took 15 months to complete. Therefore, students who were enrolled in the first year of the two-year Social Studies course were seen as suitable to participate throughout the duration of the data collection process instead

of the graduating students. The Principal and the teacher participants agreed that introducing AfL strategies early may increase the possibility of these students being encouraged and motivated to be self-regulated learners (Race, 2009).

In the present study, the students' perspectives on effective educational practice were actively sought by giving the student participants a voice through discussion and listening about their learning (Pollard & James, 2006). Often students, who are the primary stakeholders, have been neglected or underrepresented in discussions around how to improve teaching and learning practice (Fletcher, 2005; Robertson & Hord, 2008). In the present study, the student participants were seen not only as "beneficiaries of change" (Fletcher, 2005, p. 4), but also as a vehicle towards change. In addition, seeking students' views and tapping into their perceptions of the teaching perceptions and their own learning experiences, acknowledged that they were valued (Robertson & Hord, 2008) as legitimate active participants in the present research (Manefield, Collins, Moore, Mahar, & Warne, 2007). Hence, the students' views were equally as important as those of the teacher participants.

4.5.4 Background of teacher participants

Four Social Studies teachers teaching Secondary Three Express were recruited for the present study. The small sample size was appropriate based on the limited time and resources available to complete the fieldwork (Baker & Edwards, 2012). According to Patton (1990), a small sample size can present a vast collection of experiences, which are of high quality and useful in recording personal individual uniqueness.

The first Social Studies teacher recruited was Yasmin. She was 30 years old with seven years of teaching experience in both Singapore and overseas. She was knowledgeable about the O' level and the International Baccalaureate examination frameworks. Other than teaching Social Studies for class 3Y, Yasmin also taught History. She was a level coordinator with 14 hours of teaching workload (hours spent in the classroom per week) and spent about six hours each week after school taking charge of one of the aesthetic co-curricular activities. During the Phase One interviews, Yasmin admitted that she was familiar with AfL strategies and had used them during her overseas teaching stint. She was apprehensive about the success of implementing AfL strategies in a predominantly summative classroom. She believed

that the class 3Y would be hesitant to switch from teacher-centred teaching to student-centred learning practice.

The second Social Studies teacher recruited was Wanda. She was a 25 year old beginning teacher with one and a half years of teaching experience. Wanda had only taught the Secondary Three Express and Normal Academic Social Studies classes. Wanda also taught English Language. She was a form-teacher with 16 hours of teaching workload (hours spent in the classroom per week) and spent nine hours each week after school as a teacher assistant of an aesthetic co-curricular activity. During the Phase One interviews, Wanda stated that she knew about AfL strategies from one of her teacher-training modules at the National Institute of Education. However, she was yet to use AfL strategies in her teaching instruction with her class. She voiced her concern about whether the students in class 3W would accept AfL strategies since they were more accustomed to her 'teacher-talk' lessons.

The third teacher recruited was 27 year old Xena who had four years of teaching experience. Xena taught the Secondary Three Express and Four Normal Social Studies classes. Xena also taught English Language. She was a form teacher with about 17.5 hours of teaching workload (hours spent in the classroom per week) and spent six hours each week after school taking care of a sport co-curricular activity. She was pursuing her Masters degree and heard about AfL strategies during her Master's lessons. However, she had never used any of these strategies in her teaching instruction, but was willing to try to implement AfL strategies as part of her teaching activities. Xena was the Social Studies teacher for class 3X and she believed that her class would enjoy AfL strategies, such as peer feedback, since the students enjoyed interacting with their peers.

The final teacher recruited for the research was Suzie. Suzie was a 31 year old part-time teacher with eight years of teaching experience. She taught Social Studies and History. She was a non-form teacher with nine hours of teaching workload (hours spent in the classroom per week) and spent about four hours each week after school as the teacher assistant to a language club. Suzie was an active advocate of cooperative learning strategies. She incorporated cooperative learning strategies extensively in her Social Studies classroom instruction. She saw AfL strategies as a complement to her cooperative learning activities and was suitable for her 3S class

who enjoyed student-centred activities instead of listening to her delivering content. Regrettably, midway through the fieldwork, Suzie became ill and had to withdraw. Her Social Studies class was then taken over by Wanda.

4.5.5 Recruitment process

On behalf of the researcher, the Humanities Head of Department (HHOD) recruited the four Social Studies teachers after discussing the viability of the present research with the Principal. Since the researcher was a former colleague of the teacher participants, the recruitment was conducted by the HHOD to ensure that the participants did not feel obligated to be part of the research. Once the teacher participants agreed to be involved in the research, an informal information session was conducted. During the session, all teacher participants received an introduction letter, information sheet and consent forms to permit the researcher to conduct interviews and classroom observations (see Appendix A). The teacher participants agreed to be part of the research and submitted the consent forms acknowledging their approval to be part of the interview sessions and lesson observations.

4.5.6 Rationale for the recruitment of Secondary Three Social Studies teachers

The teacher participants' interest in using AfL strategies as part of their classroom instruction was the main determinant in the selection of participants for the research. Other than interest in the strategies, the four Social Studies teachers were seen as potential advocates of AfL practice in the school.

4.5.7 Background of other participants

In addition to the teacher and student participants, interviews were conducted with the Principal and the HHOD at Fairmont. Two National Institute of Education (NIE) lecturers were also interviewed.

The Principal of Fairmont is a strong advocate of continual learning for both teachers and students. Under her leadership, the Professional Learning Community (PLC) was introduced to encourage teachers to work collaboratively in order to improve the curricular and pedagogical aspects of teaching and learning. The Principal believes that the PLC gives the teachers the opportunity to experiment with new teaching and learning practices that will benefit the students in terms of the implementation of better quality lessons.

The HHOD is a teacher with more than 25 years of teaching experience who works closely with the Humanities teachers to ensure that the students do well in their high stake examinations. As the HHOD, she encourages the teachers to experiment with new teaching and learning practices as long as academic results are not compromised.

In addition, an Assistant Professor and an Associate Professor from the Humanities and Social Studies Education Academic Group at the National Institute of Education in Singapore were asked to share their thoughts about using AfL in the Social Studies classroom.

4.5.8 Recruitment process

All the other participants were recruited via email in January 2011. The introduction letter and information sheet were sent via email while the consent forms were signed before the start of the interviews (see Appendix A).

4.5.9 Rationale for interviewing the other participants

As a researcher with insider knowledge, I need to be cautious not to make assumptions about the educational practices of the school (Chavez, 2008). Through the interviews with the Principal and the HHOD, data triangulation was conducted during the analysis stage to compare and determine the areas of agreement as well as divergence in particular information provided by the teacher participants with that of the school leaders (Guion, Diehl, & McDonald, 2011).

Interviewing the school leaders also gave them an opportunity to share their perspectives on the schools' policy and support provided to teachers who were interested in using AfL in their educational practice. In addition, insights were shared on the development of teachers' professional capacity in teaching pedagogies and the challenges that school leaders faced in implementing an innovation.

The rationale for interviewing personnel from the National Institute of Education was mainly to understand more about the pre-service teacher training modules on assessment. These interviews were useful for understanding how the current teaching practice of the teacher participants was shaped.

4.5.10 Background of researcher

I taught at Fairmont since January 2001 and left the school in July 2010 to further my studies. I taught History and Social Studies and gradually took up the role of cooperating teacher, with the role of coaching and assessing trainee teachers to ensure their pedagogical skills were on par with the standards and requirements of a professional educator.

In 2009, I took up the role of the School Staff Developer (SSD) and was a member of the School Management Committee. I was responsible for planning, designing, customising and facilitating professional learning programmes based on the needs of Fairmont staff. In addition, I was a coach/ mentor and worked together with the Heads of Departments and Senior Teachers to guide teaching and non-teaching staff in developing their careers. As a result, I was able to gain access to "specific privileged information" (Brannick & Coghlan, 2007, p. 67) which otherwise would have been denied to an outsider. At the same time, as SSD, I did not sit on the work review/ ranking committee that assesses teachers' performance. My unique position was useful as I also gained access to "informal and grapevine networks" (Brannick & Coghlan, 2007, p. 67) from the teachers.

Before taking up the role of SSD, I was a Senior Teacher and was responsible for mentoring new teachers, especially teachers of History and Social Studies. All the four participants in this research were either my former mentees or trainee teachers. As a result of my mentorship role, I bonded with the teacher participants very well (Asselin, 2003).

In the present study, when possible I always emphasised the 'we' aspect where both the teacher participants and I took responsibility in sharing knowledge and expertise, particularly when critiquing the implemented AfL strategies (Breen, 2007). These critiques were important to help "perceive [the] reality from the viewpoint of someone 'inside' the case study" (Yin, 2003, p. 94), which proved to be accurate and invaluable information necessary during the revision of the lesson plans.

Even though, the 'we' aspect was emphasised, I provided guidance to the teacher participants when they asked for help to improve their classroom instruction. I felt obligated to share my views and to help because I felt that, as a researcher/ practitioner, I was in a position to help (Costley, et al., 2010). Morse (1998) warns of

the complexities of playing a dual role as a researcher and educator/ colleague. Patton (1990) also states that a researcher with insider knowledge needs to constantly manage "personal relationships, group involvement and how to manage differential associations" (p. 262) without losing sight of the purpose of the research.

4.5.11 Researcher with an insider knowledge

In the present study, I have labelled myself as a researcher with insider knowledge. I did not feel myself to be a total insider as I was no longer on the school staff. At the same time, I did not feel that I was an outsider either because I still had connections with the school staff. I felt that my 'insiderness' was positioned rather fluidly based on my multiple shifting identities through the different phases of this research by the research participants.

Chavez's conceptualization of 'insiderness' helped to illuminate my positioning. During Phase One, the teacher participants probably positioned me as somewhat of an insider – a "peripheral member researcher, who does not participate in the core activities of group members" (Dwyer & Buckle, 2009, p. 55). Meanwhile, the student participants probably saw me as almost an outsider who was present in their class to complete her research.

In Phase Two, there was probably some shift in my positioning. The student community seemed to socially position me as part of their community since I had helped them in their learning and thus, was able to gain their trust. My 'insider' position with the teacher participants seemed to begin to transform to that of an "active member researcher, who become[s] involved with the central activities of the group without fully committing myself to the members' values and goals" (Dwyer & Buckle, 2009, p. 55). During Phase Two, in the professional learning sessions, there was somewhat of a power struggle between the teacher participants and myself as they tried to show that they had knowledge about AfL strategies. This demonstrated that even though attempts were made to minimise power inequities between the participants and myself, at times, it was difficult to ensure equal status for everyone (Hewitt-Taylor, 2002). However, conducting professional learning sessions online (April to June 2011) cooled the tense situation as the teacher participants felt that they were in control of their learning needs as they dictated what they wanted to learn to get moving on the implementation of AfL strategies (Edwards, 2002).

In Phase Three, the AfL strategy lessons were administered, and I sensed another shift in my positioning. I became closer to the student and teacher participants as we worked together to understand the strengths and limitations of the AfL lessons. In this phase, the participants' worked well with me as they felt that they were more in control of the teaching and learning situation so that the implementation of the AfL lessons were successful (Chavez, 2008).

In the final phase, my positioning seemed to shift again. I thought that I was no longer seen as belonging to the community. I felt as if I was an outsider again, as I explained the reasons why I needed to observe the lessons each time I wished to do so. This was different in Phase One and Phase Three, where I was welcomed with no questions being asked of why I needed to do lesson observations. The three month break (from mid-October to January due to the examination period and school holidays) could also explain why I was perceived as an outsider when I came back to complete the fourth phase.

4.5.11.1 Precautionary measures taken by a researcher with insider knowledge

As a researcher with insider knowledge, it was important to take measures to ensure that my principles and possible biases were not interfering when I collected and analysed the data. For example, all information was treated as being new (Taylor, 2011) as I extracted this knowledge from listening to the teacher and student participants' stories (Mehra, 2002). I made it a habit to probe further with the teacher and student participants when they indicated that I knew what they were talking about (Breen, 2007; Mehra, 2002). In addition, before I started the interviews and focus group discussions, I read the following disclaimer (Chavez, 2008),

I am a researcher and all the information that you will be sharing with me is new as I am learning to understand the teaching and learning practice at Fairmont. Please do not assume that I know everything or that I am an expert.

This was helpful because the participants were reminded not to assume that I was familiar with the situation at Fairmont (Chavez, 2008; Unluer, 2012).

Cues such as *"you know"*, *"I guess"*, *"I am sure you are aware"* and *"you have taught for years"* were important indicators for me to "delve deeper" (Asselin, 2003, p. 100) and to seek clarification from the teacher and student participants. I made it a

habit to summarise or rephrase, and to seek verification from the participants that what they had intended to say was actually stated.

My private blog entries and annotations that I had made while reviewing my lesson observation notes and transcriptions were helpful to audit (Breen, 2007) and reflect on my world views about the teaching and learning practices (Asselin, 2003; Mehra, 2002). Although, these entries and annotations were subjective, they functioned to help me to be critical of the decisions that I had made, and to keep me in touch with my reality, principles and biases so that I could remain objective and avoid possible misinterpretations of the data while I reviewed the multiple meanings within the data (Mehra, 2002).

Table 3 provides a summary of the participants' involvement in the present study. The table shows the teacher participants who are involved in the different phases of the research. For example, Yasmin who taught class 3Y, was involved in the interview, PLC and lesson observations in Phase One. In Phase Two, she was involved with the PLC and the workshops. In Phases Three and Four, Yasmin also participated in the interviews, PLC sessions and lesson observations.

For the student participants, all students from classes 3Y, 3X, 3W and 3S were involved in the 'Developing Effective Learner Workshops', the pre- and post-intervention web-based surveys, reflective writing, and were observed during their Social Studies lessons in Phases One and Three (see Table 3). A few students from these classes had copies of their assignments analysed. However, only classes 3Y and 3X were observed and had samples of their assignments submitted to the researcher in Phase Four.

Table 3 also shows the students who were selected for the focus group discussions and which phases they were involved in. For example, for class 3Y, Darian, Faina, Drew, Natasha, Darwin, Ynes, Manuel, Hayden, Caley and Alex were involved in the focus group discussions in Phases One and Three however Darian, Faina, Drew and Natasha volunteered to be part of the Phase Four focus group discussion.

Finally, the NIE lecturers, Fairmont's Principal, and the HHOD, each took part in an interview during Phase One.

Table 3 Participants' Interactions with Researcher Record

Yasmin 3Y	Xena 3X	Wanda 3W	Suzie 3S
P1 - I, PLC, LO P2 - PLC, W P3 - I, PLC, LO P4 - I, PLC, LO	P1 - I, PLC, LO P2 - PLC, W P3 - I, PLC, LO P4 - I	P1- I, PLC, LO P2 - PLC, W P3 - I, PLC, LO P4 - I	P1 - I, PLC, LO P2 - PLC, W P3 - I
All students 3Y	All students 3X	All students 3W	All students 3S
P2 - W P3 - RB P1, P3, P4 - SW P1, P3 - S P1, P3, P4 - LO	P2 - W P3 - RB P1, P3, P4 - SW P1, P3 - S P1, P3, P4 - LO	P2 - W P3 - RB P1, P3 - SW P1, P3 - S	P2 - W P3 - RB P1, P3- SW P1, P3 - S
Selected students 3Y	Selected students 3X	Selected students 3W	Selected students 3S

Selected students 3Y		Selected students 3X		Selected students 3W		Selected students 3S	
Darian Yuna Drew Natasha	P1 - F P3 - F P4 - F	Ben Nelly Sage Levi Yali	P1 - F P3 - F P4 - F	Wina Casey Seth Julius	P1 - F P3 - F P4 - F	Don Fern Yan Nea	P1 - F P3 - F P4 - F
Darwin Ynes Manuel Hayden Caley Alex	P1 - F P3 - F	Brent Kaiden Wren Sabina Wade	P1 - F P3 - F	Amy Kody May Hera Jana Kiev	P1 - F P3 - F	Freya Felix Rahman Mick Zen Mika	P1 - F P3 - F

NIE lecturers, Fairmont's Principal, HHOD - P1 - I

Phase 1 (P1), Phase 2 (P2), Phase 3 (P3), Phase 4 (P4)
I   = Interview
PLC = Professional Learning Community
LO = Lesson observations
F   = Focus group discussion
W   = Workshop
RB = Reflection Booklet
SW = Sample of students' work
S   = Survey
Teacher participants' interview approximately 75 minutes each session
Student participants' interview approximately 80 minutes each session
Others' interview approximately 60 minutes

4.6 Ethics

This research was granted ethics approval (Project Number 5102) after review by the Flinders University Social and Behavioural Research Ethics Committee. It was confirmed as meeting the requirements of the National Statement on Ethical Conduct in Human Research (March 2007). In addition, the Ministry of Education in Singapore approved the data collection for this research.

A major ethical consideration was my prior involvement at Fairmont. As I have taught in the school for ten years, to avoid any suggestion of coercion, it was important that the recruitment of participants be conducted voluntarily. Therefore, the school undertook to recruit the teacher and student participants. A formal invitation letter of introduction, together with an information sheet, was sent to

Fairmont. The HHOD assisted in the recruitment of the relevant Social Studies teacher participants.

The teacher participants who agreed to take part in the research were given the information and consent letters during a meeting. The purpose of this meeting was to clarify any concerns that these teachers might have regarding the research and student recruitment. Furthermore, this discussion provided an opportunity for the teacher participants to make an informed decision on whether to be part of the research or to withdraw if they had felt that they were coerced into participating in the research by the school.

As the teachers were the central element in ensuring the successful recruitment of the student participants, it was pertinent that they were informed in detail about the research procedures. This ensured that they were in a position to answer any student queries about the research. The researcher was present throughout the recruitment sessions to assist the teachers in addressing any concerns raised by the students. At this stage, no issues were raised by the student participants about the research.

The Secondary Three Express student participants were approached by their Social Studies teachers to inform them about the research. As the student participants were under 18 years of age, a letter of information and consent to be part of the research were provided to their parents for consideration. The letter sought both the parent's and the child's consent. A copy of these letters and the Human Ethics Application are included in Appendix A.

Precautions were taken to safeguard the identity of the teacher and student participants so that they would remain anonymous in the published data. In addition, the school context has been altered and all participants were given pseudonyms during the coding process and the publication of results (Creswell, 2012; Wertheimer & Miller, 2008). All hardcopies of records have been, and will be, kept in a locked filing cabinet while the electronic files have been stored on a hard drive and protected with a password. These records are located in a secure off-site location.

In addition, if the student participants wished to withdraw from the research at any point in time, they could approach the school's counsellor, their Social Studies teacher or the researcher. In light of this, I emphasised to the student participants

during the recruitment session that they would not be penalised if they chose to withdraw.

Debriefing sessions were conducted after each focus group discussion and interview. This was an ideal way to gather ideas to further the research and simultaneously to inform the teacher and student participants on the progress of the research (Cant & Cooper, 2011; Shaughnessy, Zechhmeister, & Zechmeister, 2012). The debriefing sessions were also used to validate interpretations of the issues discussed, to address any of the teacher and student participants' concerns, and to recognise the contributions that these participants were making towards the development of knowledge in teaching and learning (Raemer et al., 2011).

All the focus group discussions and interviews were transcribed and a summary of the findings were given to the participants to validate the interpretations. Throughout the research, the teacher and student participants were aware of the possible risk of sharing information on teaching, learning and assessment practices, which might have affected the relationships among the school, the teachers and the students. However, this risk was minimal because all the participants were informed of their rights not to divulge such information. Weekly meetings with debriefing sessions were also held to allow teachers to voice any concerns. Arrangements were made to safeguard the interests and well-being of the teacher participants. For example, the school's existing grievance protocol was made available for use if required.

All students returned the letters of consent with their own and one of their parent's signature. All the participants were assured in a letter of invitation that their involvement would remain confidential and anonymous. With these precautions and procedures in place, the risks of the research were minimised.

4.7 Maximising validity and reliability

Research validity, reliability and credibility are essential to consider in the design, analysis and interpretation of research findings. Validity can be generally referred to as the level of accountability and legitimacy that is achieved through data collection, analysis and interpretation (Gelo, Braakmann, & Benetka, 2008). According to Kawulich (2005), research validity is stronger with the use of

additional strategies such as interviewing, document analysis, surveys, focus group discussions and lesson observations.

In mixed methods research, reliability (quantitative) and credibility (qualitative) are terms used to account for research quality. Reliability refers to the consistency or stability of measurement (Drost, 2011) over different settings in which similar outcomes should be attained (Nunnaly & Bernstein, 1994), while validity can be interpreted "as a fit between what researchers record as data and what actually occurs in the natural setting that is being researched, i.e. a degree of accuracy and comprehensiveness of coverage" (Cohen & Manion, 2007, p. 149). Hence, several strategies were adopted to enhance the credibility of the qualitative aspects of the research. These strategies included triangulation, respondent validation, prolonged engagement and observations in the field (Yin, 2013) and reflexive blog journals. In increasing the reliability of the quantitative aspects of the research, statistical significance of correlation coefficient and alpha were set at .01 and 0.7 respectively (Nunnaly & Bernstein, 1994).

4.7.1 Multiple data collection methods

In the present study, an explanatory sequential mixed methods design where multiple data collection methods (Yin, 2003, 2013) were used to contribute to the validity of the research, was used. Using this design allowed the statistically significant quantitative results to be further investigated through an in-depth qualitative study (Knowles, 2008). Throughout these data gathering processes, qualitative data were collected until the point where "saturation occurs and variation is both accounted for and understood" (Morse, 1998, p. 76). Hence, answering the research questions using different forms of data could counterpose each method's (quantitative and qualitative) strengths and limitations which eventually lead to the research findings (Pearce, 2012).

"Structural corroboration" (Ary, Jacobs, Razavieh, & Sorensen, 2005, p. 505) was also employed, where various types of data were related to one another to verify or question the interpretation of the situation. So the data and the methods were triangulated to ascertain whether the data collected with one procedure or instrument confirmed the data collected using a different procedure or instrument (Yin, 2013). If there was an agreement then this establishes corroboration and validation (Johnson, et al., 2007; Sturman, 1999).

Through triangulation of the different data collection methods, validity and reliability were multiplied by "encouraging convergent lines of inquiry" (Yin, 2003, p. 36; 2013) that led to themes being formed in the present study (Creswell & Miller, 2000). For example, in the present study, if the data collected were limited to the survey data, this would restrict the participants to the survey questions used which would limit the extent to which the voice of the participants could be examined in the data (Patton, 1990). If only information from interviews, focus group discussions and lesson observations were gathered, this would limit how the data could be examined statistically.

4.7.2 Naturalistic generalisation

Efforts were made to avoid speculation and overgeneralisation when drawing conclusions (Hesse-Biber, 2010). In fact, naturalistic generalisation was actively pursued, with the participants making generalisations based on their background and personal experiences (Onwuegbuzie & Combs, 2010). Caution was also taken and exercised throughout the "conception, construction, [and] conduct" (Thomas, 2011, p. 71) of the data collection and interpretation of the results. For example, during the interviews and focus group discussions, attempts were made to collect data which were free from bias and selection effects (Edwards, 1998).

4.7.3 Validating data

Measures were taken to increase the validity of the collected data. The first data collected were from the web-based survey completed by the student participants. In order to test the validity and reliability of the survey questions, content standards, cognitive standards and usability standards were met (Groves et al., 2009):

1. *Content standards (e.g., are the questions asking about the right things?);*
2. *Cognitive standards (e.g., do the respondents understand the questions consistently; do they have the information required to answer them; are they willing and able to formulate answers to the questions?); and*
3. *Usability standards (e.g., can respondents and interviewers complete the questionnaire easily and as they were intended to?) (p. 259).*

In reviewing the content, cognitive and usability standards, the Academic Supervisor of the present study reviewed the instruments and made recommendations to improve the phrasing and structuring of the questions and subject matter, and whether the content was suitable to measure the objectives of the research. Cognitive

interviews were also conducted to ensure that the "respondents understand the questions, attempt to learn how they formulate their answers" (Groves et al., 2004, p. 242), and to appraise the quality of the answer to decide whether the question produced the data that the researcher intended (Beatty & Willis, 2007). This web-based survey was later pilot tested with a group of respondents to check the instrument usability. Care was also taken to ensure that the time period between the pre- and post-test surveys was not too long "that situational factors may change" (Cohen & Manion, 2007, p. 146), or too short that the student participants could recall the pre-test questions.

In enhancing the validity of the survey, awareness of the potential gaps between the teacher and the student participants' responses and reality (Durrance, Fisher, & Hinton, 2005) was made through triangulation (Yin, 2003). The preliminary analysis of the survey results allowed more explicit questions to be asked during the focus group discussions and interviews, which further explained the survey findings. In addition, these discussions were intended to contribute to quality control of the data collected (Patton, 2001).

Another method used was lesson observations of all the Secondary Three Social Studies classes. Even though the observations were structured with a stipulated list of what was to be observed, it was still open to other occurrences that happened during the lessons (Wragg, 1999). The structured nature of the observation was helpful in relation to the issue of subjectivity as a result of selective filtering (O'Leary, 2012). Besides, the lesson observations made were not a one-off snapshot observation but a series of observations made over a span of 15 months (O'Leary, 2012). This research design progressed chronologically as the research unfolded, thus allowing previously omitted facts and views to be reviewed a number of times (Odell, 2001).

Another step taken was to use the referential or interpretive evidence method by asking the participants to review, verify and critique the researcher's interpretations of their views discussed during the interview and focus group discussion sessions (Ary, et al., 2005; Breen, 2007; Garbett, 2011). Hence, short meetings were organised to provide an opportunity for the teacher, the student participants and the researcher "to listen across [their] differences with the goal of understanding and not winning" (Hesse-Biber, 2010, p. 188), and to give the participants more opportunities to share additional anecdotes to confirm the interpretation further (Morse, 1998).

4.7.4 Reflexivity

The process of reflexivity became an important tool to enhance the legitimacy and validity of the data, since the researcher had insider knowledge about the school and the teacher participants (Hesse-Biber, 2010). Practicing reflexivity increases the awareness of the researcher's assumptions that may influence her principles, attitudes and concerns about the present research (Hesse-Biber, 2010; Pillow, 2003). Hence, constant self-reflection helped recognition of the researcher's own biases as she sought them out (Morse, 2010). Annotations were made that captured the thoughts of the researcher – a daily schedule with the logistics of the study, a method log where the rationale behind the decisions made were written, and reflections of thoughts, ideas, concerns, questions and frustrations (Ary, et al., 2005; Garbett, 2011). The annotations were constantly referred to during the data analysis process.

4.7.5 Replicating the research

Finally, a comprehensive account of the site, the participants and the procedures used in the present research have been set out so that the trustworthiness and transferability of the research outcomes to other settings, based on fit, might be achieved (Breen, 2007). According to Yin (2008), the reliability of the research would increase if the findings and the conclusions remained the same if another researcher were to replicate the procedures and the main outcomes of the research.

4.8 Concluding remarks

In this chapter, the context of the study, the rationale for recruiting the participants and the recruitment process were described followed by an account of the steps taken to enhance validity and reliability of the present study included the following: the potential for researcher bias was acknowledged and strategies developed to cope with any bias. It must be noted that reliability and validity can never be fully ensured in research, but a researcher should ensure, as much as possible, that they take efforts to increase both.

Chapter 5 Research Methods II:
Phase One The Planning

5.1 Scope of the chapter

This chapter provides an overview of the explanatory sequential mixed methods design followed by a description of the procedures to conduct the present research and the tools used for data collection in Phase One (February 2011 to March 2011).

5.2 Phase One: Research design

Reliability and validity of data collection is fundamental to maintaining the integrity of the research. An inaccurate data collection process may lead to adverse repercussions such as the inability to answer the research questions and invalid findings (Most et al., 2003). In the present study, the use of a mixed methods design led to the collection of both quantitative and qualitative data (Klassen, et al., 2012). By combining quantitative and qualitative data, "a dialogue between different ways of seeing, interpreting and knowing" (Maxwell, 2010, p. 478) the data could lead to a better understanding of the implementation of AfL and its effects at Fairmont.

In the present study, an iterative approach was selected because the design allowed the mixing of qualitative and quantitative methods particularly when the findings of one phase could influence and determine the methods in the successive phases (Nastasi, Hitchcock, & Brown, 2010). Figure 6 provides a visual representation to illustrate the multifaceted interrelationships among the various strands during the different phases of the fieldwork which were integral in the mixed methods design, the data collection procedures, and the analytical methods used (Creswell, 2010; Teddlie & Tashakkori, 2010).

In the current study, a qualitative-driven sequential mixed methods design was used to elicit the teacher and student participants' subjective accounts, particularly before and after the implementation of the AfL strategies (Johnson, et al., 2007; Morse, 2010). As the research was conducted sequentially, "the qualitative data which was the core component was conducted in the normal way until the results were analysed" (Morse, 2010, p. 344). With reference to Figure 6, the first strand showed the quantitative data (quan) as a supplementary component which carried the

function of exploring the current teaching and learning situation as perceived by the student participants. This supplementary component (quan) provided the initial direction for the core qualitative component (QUAL), particularly the formulation of questions for the interviews and focus group discussions. The core qualitative component (QUAL) provided opportunities for the teacher and student participants to clarify, explain and comment on the quantitative results from the first strand (Bazeley, 2010; Cameron, 2009; Nastasi, et al., 2010).

The second strand (QUAL) was useful in confirming the inferences that emerged from the first strand (quan). Here, the term inference refers to the "final outcome of a study … consist of a conclusion about, an understanding of, or an explanation for an event, behaviour, relationship or case" (Tashakkori & Teddlie, 2003, p. 35). The data from the second strand (QUAL) was also able to stand on its own, which added value in understanding the teacher and student participants' beliefs, attitudes and behaviours towards assessment of, and for, learning. The data from the second strand (QUAL) was also critical in the design of the intervention, particularly the learning workshops for students and professional learning communities (PLCs) sessions for the teachers. This data was used to customise the workshops, which were based on the students' learning needs, such as how to be a self-regulated learner and how to participate in peer feedback activities.

The first two strands (quan, QUAL) were essential in shaping decisions made in the subsequent phases of the research (Collins, 2010). For example, during the focus group discussions, the student participants indicated their discomfort in doing peer feedback activities. In response to this, before the peer feedback activity was implemented, the Social Studies teachers addressed the students' concerns. This allayed the students' fears, particularly on the issue of being negatively judged by their peers about their work. Meanwhile, for the teacher participants, through the interviews, they indicated the importance of becoming actively engaged in professional learning. Therefore, during the intervention phase, attempts were made to engage the teacher participants by collaborating with them in the design and administering of the AfL lesson plans. In addition, the teacher participants were involved in the lesson observations by taking field notes and later reviewing and reflecting on the drawn inferences from the classroom observations and findings (Creswell & Tashakkori, 2007; Evans, et al., 2011).
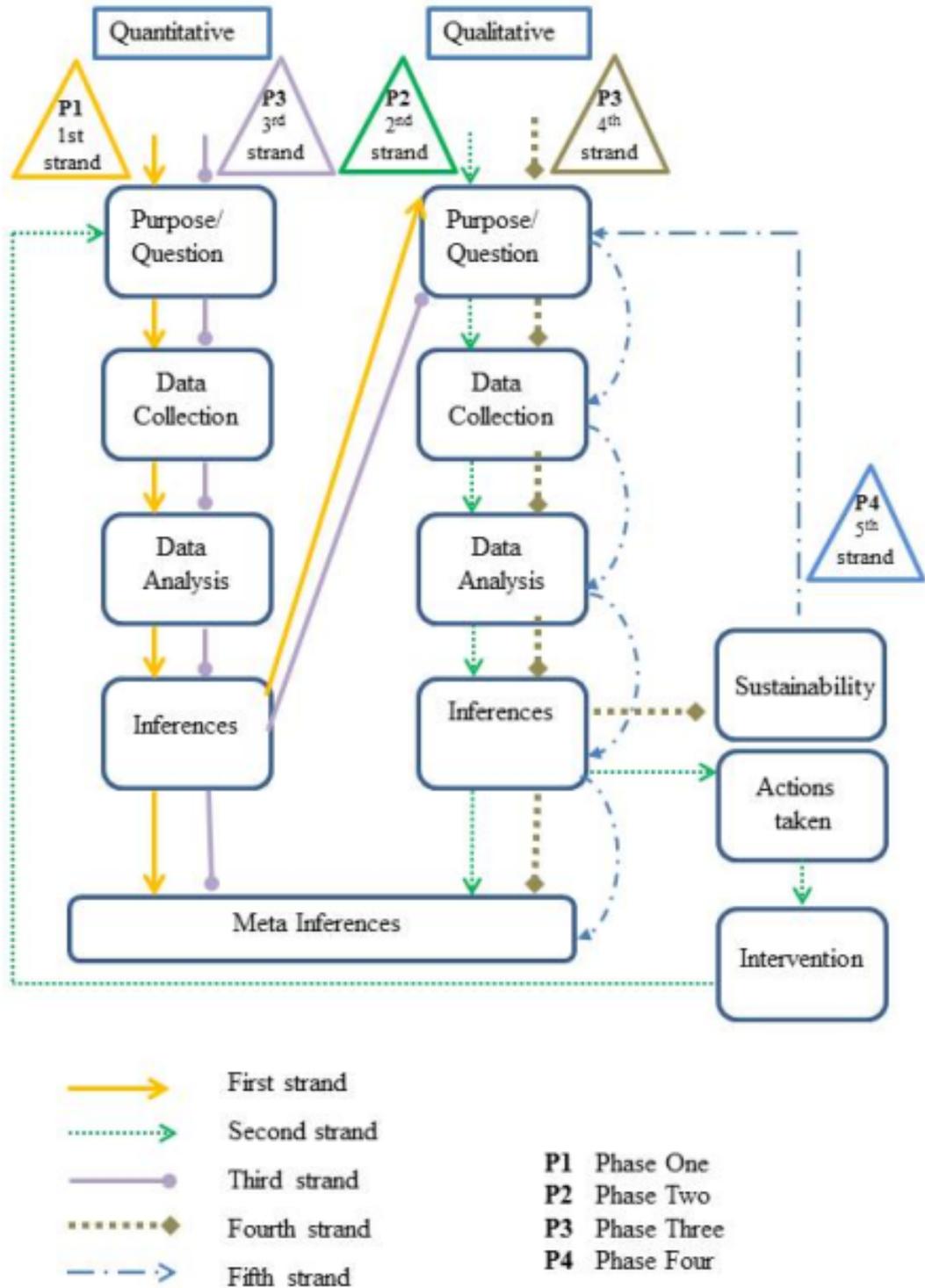
Figure 6. Summary of sequential mixed method design. Adapted from Tashakkori & Teddlie, 2003, p. 688.

In order to analyse the outcomes of the implementation of the AfL strategies, the third strand of quantitative data (quan) was conducted and data gathered in order to track the changes in students' perceptions towards AfL activities. The fourth strand

of the core qualitative data (QUAL) was then used to confirm/ disconfirm the third strand of data (quan). The fifth and final strand of qualitative data (QUAL) was collected in the final phase of the research to analyse the sustainability of AfL practice among the teacher and student participants. Finally, the subsequent concluding meta-inferences were constructed as either "confirmatory or disconfirmatory of the inferences" (Tashakkori & Teddlie, 2003, p. 688). This meta-inference process was useful because all the evidence from the five strands (quan-QUAL-quan-QUAL-QUAL) were taken into account to answer the research questions, to modify the knowledge as it arose, and to appraise the possible results (Creswell, 2010; Greene & Hall, 2010; Klassen, et al., 2012).

The sequential mixed methods design allowed both quantitative and qualitative data to be combined to provide a better understanding of the research issue. The quantitative data in this study provided the initial impetus to address the research issues. Meanwhile, the qualitative data allowed further exploration of the quantitative results. Hence, combining these approaches provided greater breadth and depth of the research issue and helped to overcome the limitations of using one approach only.

5.2.1 Phase One (February 2011 to March 2011)

The present short-term longitudinal research comprised of four phases spanning a period of 15 months from January 2011 to March 2012. The different phases were all interlinked based on causal relations. Hence, each phase was structured chronologically to answer the four research questions. Each phase also entailed different tools for data collection. The following section describes how the present study was carried out through the different phases and the different tools for data collection, such as observation notes, interviews, focus group discussions, web-based surveys, students' reflection booklets, and samples of students' work, to improve the integrity of the research.

Phase One was designed to answer the first research question, "what are the current beliefs and practices around assessment and feedback in the school?" In this phase, it was crucial to understand the current teaching and learning practice in Social Studies at Fairmont. In addition, this phase was essential to examine how the Secondary Three Express teachers' and students' beliefs, attitudes and behaviours

might influence their current teaching and learning styles, the role of assessment in learning, the use of self-regulated learning, and written and peer feedback in classroom instruction. The data collected from this phase was important as it helped to design a number of learning workshops that were customised to the teachers' and students' current knowledge and learning needs, and that targeted the learning goals necessary for the implementation of AfL strategies in Phase Three. A summary of the chronological stages of the research is shown in Table 5 at the end of this section.

5.2.2 Lesson observations

According to Patton (2001), lesson observations are the best way to understand the "complexities of many situations" (p. 21). The firsthand direct observations allowed direct experience to interpret the teaching and learning situations holistically and to discover and comprehend the occurrences that might routinely elude attention (Patton, 1990). In the present study, lesson observations were an important data gathering process that revealed what actually happened in the Secondary Three Express Social Studies classrooms (Kawulich, 2005; O'Leary, 2012). In Phase One, the objectives behind the lesson observation were to understand the existing Social Studies teaching and learning context; teaching and learning activities that took place in that context; how the teacher and student participants involved themselves in the teaching and learning activities; and finally, what these observations meant through the researcher's lens (Patton, 1990). For example, through the structured lesson observations, it appeared that 'teacher-talk' classroom instructions were largely responsible for decreasing the student's opportunities to become active self-regulated learners (Thomas, 2011).

The duration of each Social Studies lesson was 60 minutes and these were held twice weekly. In Phase One, the lesson observations occurred from February to March 2011. A total of 78 hours of lessons (39 lessons) were observed. Table 4 shows the number of lessons observed for each class. There were no lessons conducted on public holidays, during official school functions and when the teacher participants were on sick leave, which explains why class 3S has fewer lesson observations compared to classes 3X, 3W and 3Y.

Through these lesson observations, the participants' behaviours were noted and triangulated with the data that was gathered during the interviews and focus group discussions to ensure reliability and validity of the information (Becker & Geer, 1970; Durrance, et al., 2005). For example, when the students claimed that their Social Studies teacher did not share the teaching objectives, the lesson observation notes were used to confirm their claim. At times, the teacher participants reported that "they [were] engage[d] in instructional practices thought to be desirable more than they actually do" (Estacion, McMahon, Quint, Melamud, & Stephens, 2004, p. 9). Occasionally, they watered down aspects of their teaching practice when it reflected poorly on them or they would occasionally "talk themselves up" (Darra, 2008, p. 253) to depict an ideal portrayal of themselves or their teaching practice during the interviews.

Table 4 Number of Lessons Observations Made in Phases One, Three and Four

		Number of lesson observations		
Class	Teacher	Phase 1	Phase 3	Phase 4
3S	Suzie/Wanda*	8∞	14	2#
3X	Xena	11	13	7
3W	Wanda	10	11	2#
3Y	Yasmin	10	14	7

*Wanda replaced Suzie as 3S Social Studies teacher in Phase Three and Phase Four
#Due to teaching allocation, other teachers taught 3S and 3W. Hence, only two lesson observations were made
∞3S missed two lessons due to the Chinese New Year public holiday

All these claims made by the teacher participants were checked by referring to the lesson observation notes to ensure accurate portrayal of what actually happened in the Social Studies classrooms. Hence, lesson observations were important to record what occurred and to reposition my perceptions "beyond the selective perceptions" (Patton, 1990, p. 205) sometimes portrayed by the student and teacher participants (Yin, 2013).

In Phase One, I observed that the teacher and student participants were constantly on guard in relation to their behaviour in class as they knew that notes were being taken about their teaching and learning practice (O'Leary, 2005). Nevertheless, this 'uneasiness' appeared to only last for the first two weeks as I continuously reassured the teacher and student participants that what happened in class was confidential and not meant to be shared with others. This was useful as the participants appeared to start to behave naturally, which seemed to reduce reactivity among the teacher and student participants since they knew that I would be around for quite a long time (Patton, 2001).

Throughout the four phases of the research, all the observation notes were typed into a Microsoft Word document as the lessons progressed. The observation notes were descriptive and depicted the structure of the lesson, a summary of the classroom instructions, direct quotes from the participants where possible, students' interactions and reactions with their teacher, and descriptions of the participants' non-verbal emotions and actions (Kawulich, 2005).

These 'thick' descriptions of the lesson observations were helpful during the preliminary data analysis as they allowed revisitation of the lessons observed (Patton, 2001). In addition, columns were created on the data sheets to allow analytical notes to be recorded, particularly on thoughts, feelings, reactions, reflections and interpretations of the teaching and learning context, which were subjective in nature. By combining the descriptive and subjective field notes, the researcher was made aware of her own worldview, possible biases, and behaviours and values which might influence and taint the interpretation of the data (Millis, 1992; O'Leary, 2005). By revisiting the field notes, the teachers' current cognitive knowledge and pedagogical skills and students' learning capacity, attitudes and commitment towards Social Studies learning were better understood.

The lesson observations (see Appendix B) were structured around the following:

1. How Social Studies teachers inform students about the teaching objectives;
2. How the students set their learning goals based on these teaching objectives;
3. Evidence of interactions between the teacher and the students about achieving lesson objectives, assessment goals/ standards/ rubrics and dialogical communication that showed the use of feedback;
4. Evidence of active learning, particularly students engaging in self-regulated learning;
5. Evidence of peer feedback being conducted and the use of feed forward; and
6. Teachers' and students' teaching and learning styles.

After each lesson observation, the field notes were emailed to the teacher participants so that they could check their agreement with the notes and interpretations. This egalitarian process simultaneously gave the teacher participants a voice and a degree of ownership and autonomy to ensure the accuracy of the teaching and learning practice being recorded and interpreted (O'Leary, 2012), hence increasing the validity and reliability of the present research.

5.2.3 Web-based Surveys

Surveys are an important method of gathering information from a large number of respondents (O'Leary, 2005). In the present study, a web-based survey tool, known as Survey Gizmo, was used to generate standardized, quantifiable and confidential empirical data (O'Leary, 2005). The aim of this pre-intervention survey was to examine the student participants' current beliefs, attitudes and behaviours in relation to Social Studies teaching and learning practices (Creswell, 2012). Furthermore, conducting a pre-intervention survey in Phase One (with the follow-up post-intervention survey in Phase Three) is widely accepted as a methodology for evaluating an intervention (Creswell, 2012).

The first step taken to design the survey was to identify the sample (Levy & Lemeshow, 2011), the sample size, and the choice of media through which to administer the survey (Salant & Dillman, 1994). In order to avoid selection bias, all 168 Secondary Three Express students were invited to participate in the 40 minute pre-intervention web-based survey. In total, 157 students participated in the survey while 11 students were involved with the school's orientation programme when the survey was conducted. The students who missed the survey were given the opportunity to participate after school at a time convenient to them, which none of them took up. The names of the 11 students were recorded so that they were given work to do during the post-intervention survey to be conducted in Phase Three. This reduced the possibility of affecting the data quality through missing items or through non-response bias (Fricker & Schonlau, 2002).

The use of a web-based survey saved time and improved efficiency in terms of administering the survey and "avoid[ing] transcription errors which help minimise measurement error" (Fricker & Schonlau, 2002, p. 360) during the data analysis phase. To ensure honest responses from the students, tagging was conducted by the researcher using the individual computer internet protocol (IP) address that linked to the students' survey response. Only the researcher had access to the survey data and the student's IP address.

The next stage of survey construction was to develop the survey instruments which were taken and adapted from James & Pedder's (2006) research on assessment and learning. Several of the survey items were rephrased or changed to suit the

student's cognitive level. The survey consisted of 77 closed-ended items using a Likert Scale (5-point rating of strongly agree, agree, neutral, disagree and strongly disagree). These survey items were initially divided based on the following themes (see Appendix C):

1. Setting learning goals in Social Studies (16 items);
2. The use of feedback in learning (9 items);
3. Quality of feedback given (6 items);
4. Value of teacher's feedback (17 items); and
5. Perceptions of peer feedback (20 items).

These themes were later reviewed to improve the representation of the aims of each theme in the research.

The third stage was to prepare the background information, instructions and definition of terms used in the web-based survey to ensure that the phrases and words used were easy for students to understand (Fanning, 2005). This was followed by a cognitive interview (Ericsson & Simon, 1980) with two students who gave informed consent to participate in the interview. Willis' (2005) cognitive process was used as a guide throughout the cognitive interview where the two respondents were asked to complete three tasks: to reword identified survey items; to explain the key terms used in the survey items; and to clarify why certain choices were picked when selecting their choice. This process was conducted in order to gain a better understanding of the respondents' thought processes and to reconstruct any survey items that may have been misunderstood (Groves, et al., 2004; Willis, 2005).

In the fourth stage, the web-based survey was piloted in February 2011 to test the user friendliness of the survey items in terms of the layout, ease of understanding, and in particular the terms used, and to test that the items were unbiased or skewed towards one dimension (Bradburn, Wansink, & Sudman, 2004). In this pilot survey, the Social Studies teachers invited the Secondary Four Express cohort to participate in the web-based survey. 17 students volunteered to pilot the survey and no issues were raised by the students in regards to the above-mentioned issues.

The final stage was the administration of the web-based survey. The survey was conducted in mid-February 2011 in the school's library, which was equipped with 45 desktop computers. During the survey, the students were seated individually and

discussions were not allowed. Only the researcher was present to assist the students if required during the survey.

The Phase One survey results were useful as they provided insights into the student participants' beliefs, attitudes and behaviours in relation to assessment of, and for, learning. Hence, the web-based survey was intended to provide direction for reviewing the interview and focus group discussion questions in which students were able to clarify, explain and comment on the web-based survey results (Bazeley, 2010; Cameron, 2009; Nastasi, et al., 2010).

5.2.4 Focus group discussions

Focus group discussions involved gathering opinions from student participants who were organised in "formal, prearranged settings and follow[ed] a flexible, but set agenda of questions focused on a predetermined topic" (Currie & Kelly, 2012, p. 405). In Phase One, the focus group discussions were used during the exploratory stage to clarify results that emerged from the web-based survey (Patton, 1990). Moreover, having focus group discussions provided an opportunity to examine the students' discourse community as a unit of analysis (Currie & Kelly, 2012). Through group dynamics, the student participants might feel empowered and reflect better on the issues discussed, as they could make additional comments to enrich the conversations (Fletcher, 2005; Patton, 1990). Hence, the in-depth responses, attitudes, beliefs and emotions displayed were useful to examine the cultural narratives of the student participants, particularly about how they viewed the Social Studies teaching and learning practice (Durrance, et al., 2005).

In Phase One, eight focus group discussions were held. Each session lasted from between 60 and 75 minutes. Each class was represented by two focus groups made up of five boys and girls (Onwuegbuzie & Collins, 2007). According to Currie & Kelly (2012), there are no rules in terms of the number of participants in a group. One may add or omit the sample if the information that develops is significant to the research (Patton, 1990).

Purposeful sampling of student participants was conducted to ensure that rich data would be gathered (Collins, 2010). The Social Studies teacher participants made recommendations of around 16 students from each class for the focus group

discussions. The operational criteria (Yin, 2003) provided were: student participants must come from a diverse ability group; a balanced mix of male and female students from the different racial groups; and vocally introverted and extroverted students. Ten students were then randomly selected and divided into two groups to represent their Social Studies class. Eight focus group discussions with a total of 40 students were created and these groups were involved in Phases One and Three of the focus group discussions. All focus group discussions were conducted after school hours and were held in the librarian's room away from public view to ensure privacy and confidentiality. The student participants were reminded not to share their discussions after the focus group sessions, in accordance with ethical standards (Patton, 1990).

During the focus group discussions, the student participants were seated in a circle together with the researcher. A voice recorder was used during the sessions, which allowed the researcher to give more attention to the students and their responses (Patton, 1990). During the Phase One focus group discussions, the researcher took on the lead role and asked questions to each participant to start the discussions. Once the participants were comfortable in discussing their perspectives of the teaching and learning practice, the researcher switched from leading the discussions to facilitating the sessions.

The focus group discussions were divided into two sections. The first section involved bouncing ideas around to understand the "nuances of the social context … the grouping's language … or use of cultural symbols" (Currie & Kelly, 2012, p. 406) among the student participants. The second section functioned as an extension of the survey where the questions asked were semi-structured, allowing the students to express their views without being restricted by the topics, which may serve to reduce the possibility of bias (Gall, et al., 2007).

During the session, each student was given ample air-time to share their opinions (Patton, 2001). Special attention was given to ensure that no single student dominated or influenced the others with their point of view (Anderson, John, & Keltner, 2012). The student participants were given every right to agree or disagree with other participants' views as long as this was done in a respectful manner. As the focus group discussions were social constructions, the information shared had to be triangulated with the lesson observation notes and teacher interviews (Yin, 2003).

During these discussions, the student participants were asked to comment on the following (see Appendix D):

1. Perceptions of the current teaching and learning practices: how teaching and learning practices affect students' learning, what opportunities are given to students to achieve success in learning, and how receptive the students are towards change in teaching and learning practices;
2. Perceptions of success in learning: definition of success in learning, what evidence students use to determine success, and actions taken by students to be successful learners;
3. Knowledge of self-regulated learning and the use of learning goals and reflection on learning: how self-regulated the students are in their learning, their ability to self-regulate learning, and how comfortable the students are in self-regulating their learning;
4. Social Studies teachers' and students' roles in monitoring learning: how students perceive the role of the teacher in their learning, are opportunities created for students to monitor their own learning; and
5. Knowledge of feedback, peer feedback and feed forward in enhancing teaching and learning: are the students exposed to these strategies to help improve their learning, how much do students know about feedback, peer feedback and feed forward, and how much preparation is needed to help students to use the feedback process to improve their learning.

All focus group discussions were transcribed verbatim. A copy of the transcript with the researcher's interpretation and preliminary analysis were given to the student participants two weeks after the focus group sessions. A short meeting with each focus group for about 15 minutes was held to check that the student participants' perspectives were not misinterpreted in the transcript. There was no discrepancy raised by the student participants about the transcript or the interpretations from the preliminary analysis.

The data collected from the focus group discussions were valuable because they provided essential information that helped to explain why AfL strategies were not widely used in the Social Studies classrooms at Fairmont. In addition, the students' readiness to use AfL strategies was gauged and factored in when designing the learning workshops in Phase Two. This was important in preparing the students for Phase Three, where AfL strategies, such as peer feedback activities, were conducted.

5.2.5 Teacher interviews

Interviews are firsthand reports which provide rich and detailed raw data (Durrance, et al., 2005). In addition, interviews can reveal the participants' "depth of

emotion, … [how] they have organised their words, their thoughts about what is happening, their experiences, and their basic perceptions" (Patton, 2001, p. 21). Hence, in the present study, the insights that were gained from the interviews were significant for understanding the current use of AfL strategies, such as self-regulated learning, written feedback and peer feedback. Furthermore, the Phase One interviews were imperative in shaping and designing the teachers' and students' learning workshops.

All Secondary Three Express Social Studies teacher participants were interviewed in Phases One and Three. The duration of these interviews ranged from 60 to 70 minutes. The interviews were conducted in the Conference Room. An interviewer guide with a list of interview questions was prepared to ensure that the teacher participants answered the same questions (Patton, 1990). According to Patton (1990), an interviewer guide helps to organise issues that need to be discussed in a "systematic and comprehensive" (p. 283) manner so that limited time can be better utilised. Additionally, all the teacher participants were given the opportunity to pursue other issues relevant to the research during the interview sessions.

The interviewer guide consisted of two sections. The first section comprised broad semi-structured questions that helped to guide the conversations and to explore diverse elements related to AfL strategies, such as socio-cultural factors that define good Social Studies teaching and learning practice (Durrance, et al., 2005; Yin, 2003). The second section of the interview consisted of more specific questions about performance orientation, classroom assessment practice, and values, which were adapted from research conducted by James & Pedder (2006).

Throughout the interviews, the teacher participants and the researcher were, to some extent, co-interpreters of meaning as it was being created by asking 'why questions' (Yin, 2003) to make sense of themes and factors that emerged from the discussions. As a result, it was thought that the teacher participants may feel empowered, as they may see themselves as experts sharing their own lives, experiences and views as they constructed their own identities as Social Studies teachers (Fontana & Frey, 2005).

The following areas of concern were discussed during the teacher participant's interviews (see Appendix D):

1. Roles of teachers and students in teaching and learning: how does the teacher help students learn, how do students help themselves during learning, and how does the teacher set up learning situations for students to learn;
2. Evidence of students' learning and factors that influence the use of self-regulated learning: what are the indicators used by students and teachers to determine that learning has been successful, how learning goals/ learning reflection are used in teaching and learning practice;
3. Aims of assessment in teaching and learning practice: how the teachers use assessment to monitor teaching and learning effectiveness, understanding of how AfL can be used to monitor learning, and how assessment is used to plan subsequent lessons;
4. Teacher's understandings of the functions, usage and factors that influence the use of AfL strategies: definition of AfL, how teachers use AfL in teaching and learning, factors that influence the use of AfL strategies, ability of students to self-regulate their learning, and the receptiveness of students to the use of AfL strategies in their learning; and
5. The use, values, elements and challenges in using written/ peer feedback in teaching and learning practice: aims of written/ peer feedback, indicators to determine good written/ peer feedback, challenges faced in giving written feedback and conducting peer feedback, what are the students' response to the feedback provided by the teacher, and how often the teacher uses peer feedback.

The interviews were very valuable as they provided an opportunity for the teacher participants to explain the rationale for their extensive use of assessment of learning practice in their Social Studies classrooms. In addition, the interviews provided a good overview of the teacher participants' pedagogical practices, particularly how they tailored the classroom instructions to suit their students' learning needs. During the interviews, the teacher participants also shared their concerns about using AfL strategies, especially the effectiveness of the strategies in enhancing the student's learning and summative grades. The data gathered during the interviews were also used to design the professional learning workshops in Phase Two, where the teacher participants' current knowledge was tapped into and built upon to prepare them for the implementation of AfL strategies in Phase Three.

5.2.6 Fairmont interviews: Principal and Humanities Head of Department (HHOD)

Good leadership is a key factor in school effectiveness and improvement (ten Bruggencate, Luyten, Scheerens, & Sleegers, 2012). School leaders are "leaders of

learning" (Timperley, 2011, p. 147) who must be armed with pedagogical skills and knowledge about the teachers' professional capacities and student-centred learning environments, so that strategies can be enacted to improve learning (ten Bruggencate, et al., 2012). Since the school leaders were responsible for upholding the school's vision, mission and strategic thrusts (Timperley, 2011), it was appropriate that their voices be heard in regard to implementing AfL strategies in the Social Studies classrooms.

According to Fullan (2007), school leaders are in a "strategic position to promote or inhibit" (p. 162) teachers' learning. Effective school leaders positively influence teachers to commit to, and encourage collaboration to assist in developing learning resources and support at every stage of the implementation of a new innovation (Fullan, 2007). Hence, through these interviews, the Principal and the HHOD were given voice to share the challenges they faced in bringing about new pedagogical change. Furthermore, the different perspectives of the Principal, the HHOD, and the teachers and students were beneficial in providing a more comprehensive understanding of why AfL strategies were not used in the Secondary Three Express Social Studies lessons at Fairmont.

The following areas were discussed during the interviews with the school leaders (see Appendix D):

1. School's policy on the use of AfL such as feedback, peer feedback and self-regulated learning: do teachers need a top-down approach before they use AfL strategies in classrooms, how ready are the teachers and students to use AfL strategies, what is the Humanities Department's stand on the use of AfL strategies, and what strategies could be used to inculcate the use of AfL;
2. The use of AfL strategies by teachers and students: how prepared are the teachers and students in using AfL strategies in classrooms;
3. Support available to teachers who are interested in using AfL strategies;
4. Provision of training (internal and external) in preparing teachers to use AfL: what are the school's professional learning programmes pertaining to AfL strategies and how are training requirements identified to fulfil teachers' learning needs;
5. Challenges the school leader and HHOD face when implementing innovations such as AfL as a whole school approach: how are decisions made when choosing professional learning programmes, changing teachers' and students' belief, attitudes and behaviours in favour of AfL strategies; and
6. Future direction in the possibilities of integrating AfL with assessment of learning.

The data gathered from these interviews were useful in comparing the teacher participant's and the school's views about the support the school rendered to teachers who were interested in using AfL strategies in the classroom. Additionally, these interviews provided an overall understanding of the school's definition of education, student learning, and the value of assessment of, and for, learning in improving teaching and learning practice.

5.2.6.1 National Institute of Education (NIE) personnel interviews

The NIE provides academic programmes to prepare beginning teachers to be effective educators. Interviewing the NIE lecturers was useful for analysing the pre-service teacher-training module which prepares teachers to use AfL strategies. These interviews were constructive as more information was gathered that allowed the researcher to understand why the Social Studies teacher participants were apprehensive about using AfL strategies. Thus, tracing back to the teachers' pre-service experience offered possible explanations for the teacher participants' lack of interest in, and knowledge of, AfL.

The following areas were discussed with the NIE lecturers (see Appendix D):

1. Rationale for selecting the Social Studies assessment module for pre-service teacher training: who determined the assessment module for pre-service teacher training, what are the bases for selecting the assessment module, how are training needs identified and is there a need for teachers to be trained in AfL strategies;
2. Examples of AfL modules in the pre-service training programmes: identify and share any AfL modules in the pre-service training programmes, how has pre-service assessment modules increased the possibility of teachers using AfL strategies in the classroom;
3. Challenges in introducing AfL modules in pre-service teacher training: what are the factors that restrict AfL strategies from being the main assessment module - emphasis on high stakes examinations, 'teacher-talk' lessons, aim of education in Singapore; and
4. Possibility of integrating assessment for, and of, learning as part of teaching and learning practice: what are the possibilities for the teacher training programme to influence the way teachers teach and use assessment in teaching and learning practice, could the lack of exposure/ training in AfL strategies undermine its usability, and what are the roles of AfL strategies in effective Social Studies learning in Singapore.

The data gathered was beneficial as it provided insights about the pre-service training available to teachers. The professional preparation could also explain why

the teachers were inclined towards using assessment of learning instead of AfL strategies in their teaching and learning practice.

5.2.6.2 Samples of students' work and test papers

Other important data collected in Phase One were samples of students' written work in Social Studies and the first Common Test (CT1) papers. The student participants' written assignments provided evidence about the written feedback provided by the Social Studies teachers. In Phase One, there was only one written assignment given for the students for classes 3S, 3Y and 3X while no written work was given for class 3W. The written assignment was composed of one sub-question from a section comprised of four sub-questions for class 3X (see Appendix E). Students from 3S and 3Y answered one part of a two-part structured essay (see Appendix E). Other data collected in Phase One, were the CT1 papers written by the Social Studies students. The test consisted of three questions – two sub-questions from a four-part source-based question and one short structured essay question.

These samples were important as they provided evidence about the teacher's written feedback. The quality of the teacher's written feedback was discussed during the focus group sessions, particularly how much the students understood and used the written feedback as feed forward to improve their own learning. In addition, both teacher and student participants were asked to share their views on the choice of words used in the written feedback, the clarity, specificity and detail of the feedback, and the suggestions provided to improve the piece of work submitted for marking.

An adaptation of the 'move analysis' (see Appendix F) by Mirador (2000) & Yelland (2011) was used as a guide for analysing the written feedback. According to Yelland (2011), the 'move analysis' is used to identify the "functional meaning" (p. 220) of a word, phrase, sentence, or sentences, to measure the effectiveness of the written feedback in improving learning (Mirador, 2000). The 'move analysis' was useful because it provided a basis to compare the quality of the written feedback before and after the implementation of the levels of response marking scheme (LORMS) checklist (also referred to as performance standards checklist rubrics) (see Appendix G). The performance standards checklist rubrics were used to inform the students of their current performance and what they needed to do to achieve the targeted performance level. The 'move analysis' is "a specific genre-level analysis

… [that] focus[es] on meaning and ideas [of text] … the analysis begins with the development of an analytical framework, identifying and describing the move types" (Upton & Cohen, 2009, p. 4). The LORMS checklist awards student marks based on how they have demonstrated their thinking skills in their writing. For example, if the students are able to explain the given factors which demonstrate higher order thinking skills, they will be awarded with high marks in comparison to those students who only described the given factors.

5.3 Concluding remarks

Phase One was a fundamental stage of the research as it provided an overview of the Secondary Three Social Studies current teaching and learning practice at Fairmont (see Table 5 for a summary of the Phase One procedure). The information gathered was important in gauging the attitudes of the teacher and student participants, particularly in relation to their views on implementing AfL strategies in an assessment of learning environment. This knowledge from the teacher and student participants' about assessment, self-regulated learning, and feedback were important to design the workshops in Phase Two in order to prepare the participants for the implementation of the AfL strategies in Phase Three.

Table 5 Chronological Stages of the Research

Phases and Date	Inquiry Focus	Research Tools
July-December 2010 **Preparation**	• Reviewed research literature. • Designed research question and methodological framework. • Obtained ethical clearance. • Approached Fairmont's Principal and teacher/student participants to participate. • Seek MOE (Singapore) approval for data collection.	
Phase 1 February-May 2011 *What are the current beliefs and practices around assessment and feedback in the school?* Understanding the current teaching and learning practice. What knowledge and skills do students lack? What knowledge and skills do teachers need? Deepen professional knowledge and refine skills. Deepen learning skills. Formulate goals/plan.	• Conducted cognitive pilot testing for questionnaires. • Conducted pilot testing. • Student participants participated in online survey 1. • Interviewed teacher participants (Round 1) to establish personal, professional context, understanding about AfL and learning autonomy. • Interviewed school leaders and middle management leaders on possibility of implementing AfL and support rendered to teachers. • Teacher participants nominated students for focus group discussions. • Focus group discussions (Round 1) with student participants to establish understanding about current teaching and learning practice and perceptions of AfL strategies e.g. peer feedback and self-regulated learning. • Researcher observed lessons for ten weeks. • Weekly professional learning communities time (total 15 hours) and three sessions of professional learning workshops (total 12 hours). • Identify learning problems. • Write instruction plan that includes long-term goals; anticipate student thinking; data collection plan; model of learning trajectory; rationale for chosen approach. • Identify teachers' professional learning needs. • Two sessions of Developing Effective Learners Workshops for students (total 3 hours).	• Ethics letters/consent forms for teachers, students and parents. • Interview guide. • Audio recording. • Lesson observation field notes. • Samples of students' work. • Online survey questions. • Handouts for teachers' professional learning sessions. • Handouts for students' workshop. • Samples of lesson plans. • AfL videos.

Phase 2		
March-June 2011 *What are the outcomes of an intervention to increase AfL practices?* *What evidence is there of changes in teachers' teaching and students' learning beliefs, attitudes and behaviours following the intervention to increase AfL practices?* *Were there improvements in student learning processes/ strategies associated with the intervention, in terms of the students becoming more self-regulated in their learning?* *What factors may have contributed to the improvements outlined above?*	• Refine AfL lesson plans during professional learning workshops/ PLC sessions. • Implemented AfL lesson plan using the Lesson Study cycle. • Six sessions of after school meetings to review implemented AfL lessons (total 3 hours).	• Lesson plans. • Learning workshops handouts. • Videos. • AfL slides for learning workshops.
Phase 3		
June-October 2011 *What are the challenges for sustaining AfL and which strategies might be the most effective to sustain AfL?* Conduct peer feedback lessons, assisted students to set learning goals, reflective writing, implement performance standards checklist rubrics for peer feedback and teachers' written feedback, observe and collect data. Engage students in new learning experiences. Changes in students' learning leading to improved learning. Changes in knowledge through professional learning leading to change in teaching practice. Draw conclusions.	• Interview teacher participants (Round 2) to share their experiences when using AfL strategies lessons, understand the challenges in implementing AfL lessons and their perspective on effectiveness of AfL strategies in contributing towards effective of teaching and learning. • Focus group discussions (Round 2) with student participants to give feedback about their AfL experiences and change in their learning practice and effectiveness of AfL strategies in contributing to their learning. • Researcher observes lessons for ten weeks. • Weekly professional learning communities time (9 hours) to discuss changes in teaching and learning practice. • Student participants participate in online survey 2.	• Samples of students' work. • Online survey questions. • Reflection booklet. • Interview guide. • Audio recording. • Lesson observation field notes.
Phase 4	• Interview teacher participants (Round 3) to learn about the impact of change (if any), challenges faced in sustaining AfL strategies in classroom and possible solutions.	
January-March 2012 *What are the challenges for sustaining AfL and what strategies might be the most effective to sustain AfL?*	• Focus group discussions (Round 3) with student participants to	• Interview guide. • Audio recording. • Lesson observation field notes.

Reflect, review and take the initiative to amend understandings of prior knowledge. What has been the impact of the changed actions?	understand current teaching and learning practice, the impact of AfL strategies on their learning habits. • Researcher observes lessons for four weeks. • Researcher reflects on learning experience and other insights.	• Samples of students' work.
Post-Phase 4 January 2013 *Might AfL strategies have contributed to improved high stakes assessment results?* 2012/2013 Analysis/Writing	• Researcher analyses the GCE O' level results - how might AfL strategies have influenced the high stakes summative assessment? • Transcribed audio recordings. • Transcripts read and analysed for emergent themes. • Selected transcripts further analysed by comparing with other data: survey, reflection booklet, sample of students' work, and field notes. • Categorising information into themes and drawing insights.	• GCE O' level results (2010-2012). • Nvivo. • SPSS.

Chapter 6 Research Methods III: Phase Two The Intervention

6.1 Scope of the chapter

This chapter provides detailed explanations of the teachers' and students' learning workshops particularly, how the professional learning community and lesson study sessions have helped the teacher participants incorporate AfL strategies into their Social Studies lessons. In addition, how the students' workshops were conducted are also documented.

6.2 Phase Two: Research design

In this phase (see Table 5 for a summary of the Phase Two procedure), the professional learning workshops for the teacher participants, and the learning workshops for the student participants, were designed and conducted. These workshops were necessary to equip and prepare the teacher and student participants with the AfL skills to be used in Phase Three. In addition, the teacher and student participants' concerns about using AfL strategies in their teaching and learning practice were addressed.

The learning sessions consisted of two main components for the teacher participants. A full one-day and two half-day workshops were conducted on AfL principles and tools, the functions of Professional Learning Communities (PLCs), and the lesson study cycle. These were followed by weekly sessions of PLC, each of which was about one hour in duration, from February to the end of September 2011. During these sessions, the teacher participants discussed and reviewed the AfL lesson plans and shared their reflections based on the observations made during the AfL lessons.

For the student participants, there were two workshops of two and a half hours each on 'Developing Effective Learners'. During these workshops, the students were taught how to be effective learners through self-regulated learning, how to participate in peer feedback activities, and how to utilise written feedback to improve their learning.

6.3 Professional learning workshops and school support

"Professional development is considered an essential mechanism for deepening teachers' content knowledge and developing their teaching practices" (Desimone, Porter, Garet, Yoon, & Birman, 2002, p. 81). For teachers to teach effectively, they need to stay up-to-date with new pedagogical knowledge so that they can improve their teaching skills (Guskey, 1999) and increase their students' achievements (Desimone, 2009). According to Bredeson (2000b), for professional learning to be effective, the learning framework should be aligned with the school culture and integrated into the day-to-day work routines of the teachers. Hence, in the present study, school support for the use of AfL strategies was essential, to encourage teacher participants to integrate the strategies into their Social Studies classroom instruction.

According to Fullan (2007), a Principal who actively supports and legitimises instructional change would encourage the teachers to embrace the change more effectively. This is because she "is the person most likely to be in a position to shape organisational conditions necessary for [the] success[ful]" (p. 96) implementation of the new innovation. During an interview with the Principal, she revealed that she strongly encourages the teachers to explore new teaching ideas collaboratively to prevent them from becoming isolated (Hadar & Brody, 2010). The Principal's decision to introduce PLCs and AfL strategies into the school was a stepping-stone towards the teachers participating in self-reflection and sharing their thoughts through dialogue about their teaching practice (Hemphill & Duffield, 2007).

As part of the school's PLC framework, the Principal made it mandatory for teachers to be given an hour each week in their timetable to engage in their PLC projects. This was a key move that allowed the teacher participants the time to discuss, plan and review AfL activities without disrupting their schedule. In addition, the Social Studies teacher participants were given time off from their teaching duties to do lesson observations related to their PLC project. Hence, the support and additional resources provided by the school were highly valuable, and this made it possible for the AfL strategies to be administered in the Secondary Three Social Studies classrooms.

A considerable amount of literature has been published on the importance of encouraging and supporting teachers during the initial implementation of AfL strategies (Black, Harrison, Lee, Marshall, & Wiliam, 2003; Black, et al., 2004; Black & Wiliam, 1998b; Harlen, 2005). Therefore, the professional learning workshops were initiated to provide the teacher participants with the necessary skills and pedagogical knowledge they required before they implemented the AfL activities in their Social Studies classrooms.

After taking into account the teachers' theoretical knowledge and experiences with AfL, the learning sessions were customised to provide enough information to avoid overwhelming the teacher participants with too much new knowledge.

Before the first learning session commenced, the teacher participants and the researcher set clear professional learning outcomes. Three expected outcomes were identified and were generally used as a measure of the immediate success of the professional learning sessions. These outcomes included the impact that professional learning has on the teacher participants' beliefs, attitudes, knowledge and practice of AfL strategies; how professional learning pertaining to AfL has impacted upon the school in terms of quality teaching and learning; and how students' learning practice and academic results have changed.

The workshops were carried out in a sharing-cum-discussion format with relevant information being disseminated to prepare teachers for the implementation of the AfL strategies.

6.4 Professional learning communities

During the professional learning session, the rationale, principles, features, and functions of PLC were explained to the teacher participants.

Firstly, an overview of the strategies and expectations of PLCs was shared with the teacher participants. During the session, PLC was emphasised as a useful tool that could encourage professional learning and research based on daily teaching and learning activities (Hiim, 2011). Schmoker (as cited in DuFour, Eaker, & DuFour, 2005) defined a PLC as:

A group of teachers who meet regularly as a team to identify essential and valued student learning, develop common formative assessments, analyse current levels of student achievement, set achievement goals, share strategies, and then create lessons to improve upon those levels (p. xii).

Schmoker's definition of a PLC fits well with Bruce & Ladky's (2011) lesson study cycle where collaboration and learning are emphasised to improve educational practice. According to Fullan (1993), students cannot be "continuous learners and effective collaborators, without teachers that have the same characteristics" (p. 46). Hence, throughout the PLC sessions, other than ensuring students' effective learning, teachers' learning and collaboration also became a core part of the PLC project.

The teacher participants also made a commitment to be part of the school's PLC project for nine months. During this period, resources and support were given to the teachers during and after school hours. There were weekly meetings for about an hour where the teacher participants discussed the realities of their teaching and learning experiences (Miller & Crabtree, 1999). Through these discussions and self-reflection processes, the teacher participants shared the reasons why they took certain actions in regard to assessment practice (Cousins & Earl, 1995; Miller & Crabtree, 1999). The teacher participants also critiqued their AfL activity lesson plans before and after implementing the lessons. During these collaborative sessions, teacher isolation was alleviated as they worked and learnt together to improve student learning (Chenoweth, 2009).

For professional learning to be successful, the teacher participants must play an active role in determining their professional learning needs and then to take corrective actions, so that any gap between current and targeted competency levels can be reduced (Black & Wiliam, 1998b). One corrective action that was taken to rectify and expand the Social Studies teachers' professional knowledge and skills was watching videos on how AfL was used in the classroom. This was followed by a discussion about the differences between the teacher participants' current teaching practice and teaching and learning advocated through use of AfL strategies. There were also discussions about the feasibility of adopting AfL strategies in the Social Studies classrooms. In addition, teachers were given a copy of Black & Wiliam's (1998) 'Inside the Black Box: Raising Standards Through Classroom Assessment' to read. More discussion sessions were held during the PLC sessions to assist the

teacher participants to synthesize and contextualise their understandings of AfL into their classroom practice (Timperley, 2010).

The teacher participants, together with the researcher, also identified the goals and outcomes of the PLC project at the beginning of the learning session. The three main goals identified were:

1. To conduct two peer feedback lessons;
2. To set learning goals with students and provide time for students to reflect on their learning; and
3. To improve on the written feedback given by the teacher.

The outcomes of these goals were:

1. Students to be better able to differentiate between the use of explanations and descriptions in their essays;
2. Students to be more self-directed learners, better able to identify their current competency level, and to take actions to close their learning gaps to reach their targeted competency level; and
3. Students to better understand the performance standards through the introduction of the performance standards checklist rubrics to improve teacher's written feedback.

The final deliverable that the teacher participants and the school set was to present their PLC project at the World Association of Lesson Study (WALS) conference in Tokyo, Japan.

6.5 Lesson study and peer feedback

In the present study, the lesson study cycle was used as a tool during the teachers' professional learning sessions. In this lesson study cycle, the Social Studies teacher participants and the researcher started their learning journey by identifying the learning problems their students faced in Social Studies, which they wanted to solve. Once the learning problem was identified, the teacher participants determined the knowledge and skills needed to close the students' learning gaps. This required the teacher participants to gauge the students' current and projected competency levels so that learning outcomes could be achieved. Hence, information from the students' assignments and formal assessments was used to determine the students' learning gaps. The teachers were also trained in how to interpret the new evidence of student learning to guide their teaching practice, because the function of assessment was no longer to categorise students but to address the students' learning needs and

to inform teacher participants how effective their classroom instruction had been (Timperley, 2008).

The next step taken was for the teacher participants to plan their lessons (Bruce & Ladky, 2011). The teachers decided to use peer feedback as the mode of teaching and learning to solve the students' learning problems. These lesson plans were then reviewed to ensure that the "theoretical ideas underpinning [AfL] practice" (Timperley, 2010, p. 7) were understood by the teachers. This was critical to avoid "placing new information into pre-existing cognitive frameworks" (Coburn, 2001, p. 147) without giving the teachers a chance to engage in them. Failing to do so could hamper the process of comparing the teaching and learning effectiveness between assessment of, and for, learning strategies, which could eventually determine the continual use of AfL strategies in the classroom. In order to assist the teacher participants to plan their lessons, Meyer's (2003) S.M.A.R.T (Specific, Measurable, Attainable, Realistic and Time-bound) guidelines were used (see Chapter 7, sub-sections 4 on how teacher participants used S.M.A.R.T).

One teacher participant then conducted the planned lesson while the other teacher participants observed and took notes which were shared during the post-lesson observation discussions. Attention was given to analyse the possible impact of implementing AfL strategies, such as participation in peer feedback, during the discussions. This reflective phase allowed the teacher participants to draw conclusions based on the impacts of the changed teaching and learning actions (Bruce & Ladky, 2011; Timperley, 2010). This process was essential because it was an important determinant that could decide the continual use of AfL at Fairmont (Timperley, 2010). In this phase, the teacher participants reflected on, and analysed the implications of, the change in their teaching practice for their students' learning. This reflective phase gave the teacher participants a chance to review their prior knowledge about AfL strategies and to evaluate the outcomes of their lesson study process, particularly the creation and refinement of instructional strategies, delivery of peer feedback lessons, performance standards checklist rubrics, and students' self-regulated learning.

6.6 Quality written feedback

Another area that was emphasised during the professional learning workshop and the PLC sessions was the possibility of improving the quality of the teacher's written feedback, as good quality feedback is an essential component of learning (Parr & Timperley, 2010). According to Sadler (1998), AfL is "specifically intended to provide feedback on performance to improve and accelerate learning" (p. 77). Hence, it was pertinent that the teacher participants reflected on, and reviewed the quality of, their feedback.

During the review sessions, the teacher participants discussed the aims of writing feedback and reflected on whether they had achieved these aims. They also discussed the challenges that prevented them from giving well-written feedback. For example, the constraints of time for marking, the large number of students per class (between 40 and 44 students) and having three Social Studies classes to teach, were the main challenges highlighted. The teacher participants were also involved in after-school activities that took away time that could have been used for marking and writing feedback. Hence, the teacher participants and the researcher thought of ways to provide quality written feedback that could be used even if the teachers had large numbers of students and were short of time to complete their marking, namely the use of performance standards checklist rubrics.

Before creating the performance standards checklist rubrics, the teachers started to identify the strengths and weaknesses of their own written feedback and compared them with the features of good written feedback. This exercise increased the teachers' awareness of the quality of their own marking and written feedback. The teacher participants discovered that their written feedback was confined to simply randomly placing ticks, crosses and question marks on their students' work, which was not useful information for improving learning. Additionally, the teachers also gave marks and wrote words such as 'how', 'why' and 'explain' which do not assist students in understanding what was being conveyed by their teacher about the quality of their assignment (Brookhart, 2008). The teachers also felt that their written feedback failed to identify the students' current competency level or to provide the necessary advice, particularly suggestions or actions that needed to be taken for the students to reach the targeted competency level, which directly hampered the

students' learning progress (Sadler, 1989; Walker, 2009). Hence, feed forward was almost impossible since the comments written were not usable (Icy, 2008).

The teacher participants realised that for learning to occur, "it is the quality" (Sadler, 1998, p. 84) of feedback that must be focused on for the students to be able to close their competency gaps. The teacher participants thought that incorporating the performance standards into the checklist rubrics was a better alternative to help the students to take actions to close their learning gaps since the comments could be easily understood and used by the students as feed forward (Earl & Giles, 2011) These checklist rubrics, which incorporated the performance standards, would also identify the students' current competency levels, especially the content and skills that they have problems with, and the steps that they could take to improve their work. In addition, the teacher participants felt that by sharing the performance standard checklist rubrics with the students, the language of assessment was no longer a specialised knowledge reserved for the teachers (Boud, 2000), but that it would be shared with the students so that they could better self-regulate their learning and be motivated to strive to meet the performance standards (Nicol & Macfarlane-Dick, 2006).

The teacher participants and the researcher used two PLC sessions to create the performance standards checklist rubrics (see Appendix G). Nicol & Macfarlane-Dick's (2006, p. 207) seven principles of good feedback practice was used as a guideline to create the performance standards checklist rubrics. Firstly, in the checklist rubrics, the goals and performance standards were clearly written to provide high quality information for the students to use to assess their learning progress. Hence, the teachers' and students' goals and outcomes of assessment were synchronised to facilitate effective teaching and learning practice and assessment.

Secondly, rubrics were organised to help students to self-regulate their learning and to assist them in making judgements of their learning progress against the performance standards. This meant that the language used in the performance standards checklist rubrics had to be simple enough for the students to understand and to use as feed forward (Sadler, 1989; Weaver, 2006). In addition, these rubrics also provided the students with an opportunity to discuss their assignments as the checklist rubrics were also used during the peer feedback activities. As the students

discussed their work with their teacher and peers, it enhanced their understanding of the content and their skills as they articulated and tested their knowledge with their peers and their teacher based on the performance standards checklist rubrics.

Thirdly, with the performance standards checklist rubrics, the teachers thought that more ownership and responsibility for learning should be placed in the hands of the students. The teachers felt that to motivate the students, students should be more in charge of closing their own learning gaps especially when the feedback they received could be used as feed forward to improve on their future assignments.

As the performance standards checklist rubrics were new to the students, the teacher participants decided to use one of their Social Studies lessons to explain how to use the rubrics as feed forward (Parr & Timperley, 2010). Hence, by providing the performance standards checklist rubrics, the teacher participants felt that the likelihood of the students understanding and using the written feedback to improve their learning would eventually increase.

6.7 New role of teacher and students in teaching and learning

The final section of the professional learning workshop discussed the new roles of the teacher and the student in teaching and learning and the teachers' concerns pertaining to this new role. The teachers also examined the possible use of AfL tools such as setting learning goals and reflective writing to help students to become self-regulated learners, and finally, they looked at how to conduct peer feedback sessions.

In this workshop, the most important component was sharing views about the teachers' and the student's roles in teaching and learning when using AfL strategies. Through the teacher participants' reading of journal articles related to AfL strategies, they knew that for the AfL strategies to make inroads in a summative setting, the role and relationship between the teacher and the students during teaching and learning practice had to be redefined (Earl, 2003; Fullan, 2007). This meant that the students were now more responsible for defining their success in learning after each lesson instead of waiting for the teachers to define it for them through summative tests.

Hence, this sharing session was a good opportunity for the teacher participants to reflect on their "traditional, fixed views of learning, such as standardised testing [that

could] inhibit their use of formative assessment" (Buck & Trauth-Nare, 2009, p. 479) in their teaching practice. The sharing component also increased the teacher participants' pedagogical content knowledge to enhance the possibility of using AfL strategies in the long term (Jones & Moreland, 2005; Smith, 2011).

6.8 Self-regulated learning

For learning to be effective, students should be self-regulated learners since "learning is not something that happens to students, it is something that happens by students" (Zimmerman, 1989, p. 21). According to Boud (2000), "research shows that frequent self-evaluation is highly efficacious in enhancing student achievement" (p. 157). Unfortunately, the Social Studies students have never been involved in assessing their own learning because the assessment of learning is a job reserved for the teachers. In addition, the teacher participants have never used or taught the students how to self-evaluate their own learning. Since, both the teacher and student participants were new to the concept of self-regulated learning, the teacher participants and the researcher decided to take small steps towards teaching self-regulated learning processes to the students. At the same time, the teachers felt that it was also important to increase the students' awareness of the importance of self-regulating their learning.

The teachers felt that for the students to be effective self-regulated learners, both the students and teachers must be clear about the learning goals and outcomes that needed to be achieved. Hence, the teachers had to convey to the students the learning objectives at the start of every Social Studies lesson and help the students to envision the outcomes of the learning goals. The teacher participants also agreed that since the setting of learning goals was a new learning practice, the students should be allowed to tailor the learning objectives based on their own learning capacity. As a result, during the lesson planning process, a section was created to identify the learning objectives for the particular lesson, which served as a reminder for the teacher to inform the students about the learning objectives.

The next step taken by the teacher participants was to give the students enough time to reflect on their learning at the end of the lessons, which was also incorporated into the lesson plan. Often, the lesson ended the moment the bell rang, which gave

the students no time to think about how much they had learnt. This lack of time to reflect on their learning prevented the students from seeking clarification from the teachers if they encountered any problems during the lesson itself. Hence, the teachers made a decision to stop their lessons at least eight minutes before the bell goes to give students time to reflect on their learning and to seek help from the teacher or their peers to clarify their doubts.

To help the students to be self-regulated learners, a reflection booklet was also introduced. In this reflection booklet, students wrote their learning goals at the start of each lesson (in Week 1 of Phase Three), which they adapted from the teacher's teaching/ learning objectives. At the end of the lesson, based on the learning goals that they had set, the students evaluated their learning by reflecting on what they had learnt. If they did not understand any parts of the lesson, the students would be required to identify this section and propose actions that they could take to close the learning gap. This self-evaluation process was an important step, as the students were made aware of what they do and do not know, whereas previously they assumed that they had understood the lesson without going through the process of self-evaluation. For the teachers, these reflection booklets provided immediate feedback on the effectiveness of their teaching that could be used as a feed forward mechanism to adjust their instructional strategies to further improve their teaching capacity. According to Guskey (2007),

> *... when as many as half the students in a class answer a clear question incorrectly or fail to meet a particular criterion, it is not a student learning problem - it is a teaching problem. Whatever strategy the teacher used, whatever examples were employed, or whatever explanation was offered, it simply did not work (p. 20).*

Thus, the reflections written by the students provided useful information for the teachers to address any learning issues that might arise in a just-in-time fashion before learning misconceptions set in. Consequently, for effective learning to take place, students must also be active learners, assessing and monitoring their understanding of the learning targets and performance outcomes. As the students became clear on what they were learning and why, they became aware of their learning misconceptions and the need to take action to adjust their learning strategies to influence their own learning.

6.9 Conducting the peer feedback process

Using peer feedback in teaching and learning is a common pedagogy used in many non-Asian educational settings. However, at Fairmont, peer feedback was not a popular pedagogy used in teaching and learning. The teacher participants were apprehensive about using peer feedback in their lessons because they felt that the students lacked the ability to provide accurate feedback for their peers (Liu & Carless, 2006). Hence, to convince the teacher participants about the effectiveness of peer feedback in improving learning, two PLC sessions were used to explain its effectiveness.

In another PLC session, the teacher participants learnt how to organise a peer feedback lesson. Together with the researcher, the teacher participants identified the purpose, rationale and expectations of the peer feedback process on two topics – the Sri Lanka and Northern Ireland conflicts. The teacher then developed the performance standards checklist rubrics to help students during their peer assessment and feedback process. The students were then grouped based on the same-ability. The researcher and teacher participants felt that the same-ability grouping could lead to greater gains for the students since all the groups would be involved in similar learning processes: for the higher-ability groups at a more intricate level and the lower-ability groups at a simpler level.

The teacher participants also discussed the provision of guidelines and checklists to help the students to scaffold their learning during the peer feedback process. In helping the teacher participants to conduct the peer feedback lesson, lesson plans were created (see Appendix H) where the steps in the lesson were clearly delineated including learning activities and key questions. The students expected reactions and responses based on these activities, and key questions were also predicted and suggestions about how the teacher could respond were listed. A list of questions was also written to help the teachers to assess the students' learning. To further assist the teacher participants in assessing the students' peer feedback, guiding questions were also listed to evaluate the quality of the peer feedback session and how much the students were learning:

1. Are students talking about the essays?
2. Are students discussions based on the performance standards? and
3. Are students making collaborative decisions?

In summary, the PLC sessions on peer feedback were useful for giving the teacher participants an idea about how to conduct peer feedback in their Social Studies classes. The session gave the teachers the opportunity to share their concerns about the ability of the students to provide appropriate feedback and to be task-oriented during the peer feedback process. In addition, the peer feedback lesson planning session gave the teachers a chance to visualise how a peer feedback lesson could be conducted and to predict possible problems and devise solutions to help the teachers to ensure smooth implementation of the peer feedback lesson. Hence, this session aimed to increase the teachers' confidence level in effectively conducting the peer feedback lesson.

6.9.1 Student workshops (Session One)

The student participants were also provided with training to prepare them for the implementation of AfL strategies. Quite often, learning workshops only focus on preparing the teachers with the pedagogical skills necessary to carry out the new teaching and learning practice, basically ignoring the learning needs of the students. Hence, in the present study, the student participants were equipped with the learning skills essential to prepare them for the implementation of AfL strategies in Phase Three. By doing so, the student participants could better incorporate the AfL activities into their learning strategies, thus increasing the possibility of sustaining the use of AfL in the long term.

The first workshop session was conducted for each of the four classes before the start of the March holiday break for the student participants to learn about the following: goal setting, reflective writing, self-regulated learning, and participating in peer feedback activities.

6.9.2 Goal settings

The students' first workshop session was divided into three segments. The first segment focused on setting learning goals. This segment started with the students having group discussions about the features of effective learners. The researcher then highlighted the main feature of an effective learner, which was the ability to set learning goals and reflect on whether these learning goals had been achieved. Setting learning goals and reflecting on learning was an essential skill to help the students to

become more self-regulated learners and to eventually perform better in their academic assessment. During the learning session, the students were taught how to set learning goals using the S.M.A.R.T technique (Meyer, 2003) which the teacher participants also used to manage their professional learning. The students were also shown samples of learning goals so that they could understand how these goals were written. During the group work, more samples of learning goals were given to the students for them to discuss and suggest ways to improve the goals using the S.M.A.R.T technique. This exercise seemed to be effective as it provided hands-on practice and created opportunities for the students to set their learning goals and invite their peers to identify the strengths and to suggest ways to improve the goals that were set.

As the learning goals were closely linked to self-regulated learning, the second session of the learning workshop was important as it assisted the student participants to make connections between the setting of learning goals and self-evaluation, which were key components towards achieving self-directed learning.

6.9.3 Self-regulated learning

Research has revealed that self-regulatory processes like setting learning goals, self-monitoring/ evaluating can positively influence students' scores on summative tests or their overall achievement (Kitsantas & Zimmerman, 2009). Hence, it was important to prepare students about how to self-regulate their learning. According to Zimmerman (2002), self-regulation is:

A self-directive process by which learners transform their mental abilities into academic skills … These learners are proactive in their efforts to learn because they are aware of their strengths and limitations and because they are guided by personally set goals and task-related strategies … These learners monitor their behaviour in terms of their goals and self-reflect on their increasing effectiveness (pp. 65-66).

In light of Zimmerman's definition of self-regulation, attention was given to teaching the students how to self-monitor/ evaluate their learning and to take actions to remedy any learning gaps through the setting of learning goals and reflective writing. Throughout the learning session on self-regulated learning, the students were taught how to monitor their learning using the following three-step approach:

1. Knowing when you know;
2. Knowing when you don't know; and
3. Knowing what to do about it when you don't know.

The students were taught how to evaluate their learning by using the set learning goals as a benchmark. This evaluation of the students learning was conducted through reflective writing. However, the students shared their concerns about the time provided for writing their reflections, and the value of setting learning goals and evaluating their learning in how this contributed towards their academic achievement. The researcher assured the students that time would be allocated for the students to write their reflections during their Social Studies lessons. The researcher also stressed that academic achievement could be improved, as long as students effectively self-regulated their learning and instilled the habit of having "personal initiative, perseverance, adoptive skill" (Zimmerman, 2002, p. 70) and putting effort into setting their learning goals, and monitoring and evaluating their learning.

Each student was also provided with a reflection booklet to assist them throughout the self-reflection process. It was important to familiarise the students with the structure of the booklet and in which sections of the booklet the students needed to write their learning goals and reflections. In this booklet, the students were required to write their learning goals, reflect on their learning, and specify actions that they would take to remedy any competency gap. A column was created for the teacher to write her remarks based on the students' reflections. This was important to create opportunities for the teachers to respond to the students' reflections in terms of providing suggestions about ways to close possible learning gaps and to motivate the students in their learning.

In summary, this learning session aimed to familiarise and instil in the students the habit of setting learning goals and evaluating their learning through reflective writing. The hands-on session was useful in boosting the students' confidence levels to actively take charge of their learning, which is an important contributor to academic achievement.

6.9.4 Peer feedback

The final session of the learning workshop aimed to prepare students for the peer feedback process that would be implemented in Phase Three. During this session, the

students were asked to outline their understanding of peer feedback. The researcher then explained to the students how peer feedback would work:

You have three to four students in your group, you are given your friends' essays, you read, discuss and write comments, you must refer to the performance standards checklist rubrics because your markings and feedback must be based on the rubrics.

Students were told that at the end of the peer feedback process, the teacher would mark and award the final marks and that any marks awarded by their peers would not be part of the computation of the Social Studies formal grades.

The students also brainstormed the advantages of using peer feedback in their learning. By getting students to discover the benefits of using peer feedback on their own, the researcher believed that this could help to convince the student participants to use peer feedback in their Social Studies class. During the session, the students were also taught how to engage in peer feedback using the advice-centred style (Ramage, Bean, & Johnson, 2003) where peers worked collaboratively by orally discussing how to improve the essay. The reviewers and the essay-writer would then deliberate by explaining why the feedback given should be rejected or defended. These dialogical exchanges were encouraged so that the students could "think and reason together" (Carless, 2013b, p. 286) instead of working in isolation when giving feedback about their peers' work. Meanwhile, the appointed scribe would then record the strengths, weaknesses and areas for improvement in the worksheet provided, which would be given to the writer of the essay to be used to revise their work.

In addition, the students were taught how to be effective help seekers and givers during the peer feedback activity. For example, as a help seeker, a student could ask specific questions and be tenacious when seeking help while a help giver could provide comprehensive explanations and opportunities for the seeker to solicit further clarification. The importance of being respectful when receiving and giving feedback was also emphasised, to ensure that no personal comments would be made that could hurt the emotions of the other students during the peer feedback process.

Before the session on peer feedback ended, the students shared their concerns about participating in peer feedback. The students highlighted issues such as accuracy and clarity of their peers' feedback and the credibility of the peer reviewers

in giving feedback. The researcher explained that the onus of making peer feedback a success depended on how much the students were willing to utilise the dialogical exchanges that they had with their peers to improve their learning. On top of this, emphasis was placed on the willingness of the students to put in the effort to identify the strengths, weaknesses and areas for improvement to help their peers to improve their essays. Finally, the importance of taking ownership of their own learning and that of their peers was another message stressed that would help to ensure that peer feedback could enhance the students' learning.

In summary, other than teaching the students how to participate in the peer feedback process, the need to have a positive attitude was also stressed to ensure that effective learning occurred. Hence, the learning session provided avenues for the students to be prepared for the implementation of the peer feedback process in Phase Three. Through the discussion sessions, students were able to voice their concerns about how peer feedback may affect their learning progress. These sessions were the most helpful because addressing the students' concerns helped to allay the students' fears and increased their confidence that they could contribute to their own learning and that of their peers.

6.9.5 Student workshops (Session Two)

In the second workshop conducted in June, the student participants were involved in a hands-on session, which focused on the writing of learning goals, reflecting on their learning, and participating in a peer feedback activity. The student participants also attended a one-hour refresher course conducted by their Social Studies teacher at the start of their lesson in Term Three. In addition, this session addressed any concerns the student participants might have had about using AfL strategies in their learning.

These learning sessions also helped to prepare the students with AfL skills and supported them emotionally as they moved away from teacher-centred teaching to a student-centred learning approach. Furthermore, the hands-on session gave the students first-hand experience of how to be a more self-regulated learner. As well, the step-by-step guide used during the peer feedback practice session helped the students to understand the principles and structure of peer feedback and what made it an effective learning tool.

The guidance, support and experience gained during the peer feedback practice session helped ease the students' anxiety of taking charge of their own learning and that of their peers. The learning sessions were an eye-opener for the students as they found that monitoring one's learning meant that a student must constantly self-regulate their learning by identifying what they know and do not know and taking action to remedy any learning gaps through reflective writing and the feedback process.

6.10 Concluding remarks

In the teachers' and students' learning sessions, emphasis was placed on peer collaboration, where interactive engagement helped to increase learning. Through interactivity, the teachers and students seemed better engaged in their respective learning sessions. The synergy that emerged during the teachers' and students' learning sessions was encouraging, as new ideas were developed to make the implementation of AfL strategies possible, particularly in encouraging students to be more self-regulated learners through the setting of learning goals and reflecting on their learning. For example, issues that occurred about how best to implement AfL strategies were resolved quickly as all the teacher participants were actively sharing their views, suggesting solutions and evaluating alternatives to remedy the weaknesses of the planned AfL activities, especially during the process of creating the performance standards checklist rubrics. Finally, the learning sessions enabled the participants to learn from others and to prepare themselves to participate in AfL lessons such as the peer feedback activity in Phase Three.

Chapter 7 Research Methods IV: Phase Three The Implementation

7.1 Scope of the chapter

This chapter outlines the implementation of how AfL strategies such as setting of learning goals, reflective writing and peer feedback were conducted in Phase Three. In addition, the use of the performance standards checklist rubrics is illustrated in relation to quality teachers' written feedback.

7.2 Phase Three: Research design

Phase Three was designed to answer the second research question, "what are the outcomes of an intervention to increase AfL practices?" and the three sub-questions, "what evidence is there for changes in teachers' teaching and students' learning beliefs, attitudes and behaviours following the intervention to increase AfL practices?"; "were there improvements in student learning processes/ strategies associated with the intervention?"; and "what factors may have contributed to any improvements?" (see Table 5).

In this phase, the following AfL strategies were implemented during the Social Studies lessons in Phase Three:

1. Peer feedback to allow students to test and articulate their understanding of the performance standards checklist rubrics by assessing their peers' work and to complete the feedback loop through the use of feed forward;
2. Writing learning goals and reflections to help students to self-regulate their learning; and
3. The use of performance standards checklist rubrics to help students identify their current and targeted competency levels and take actions to self-regulate their learning through monitoring and self-evaluation of their learning.

Phase Three also focused on how these strategies were implemented to enhance teaching and learning practice.

The teacher participants also introduced the performance standards checklist rubrics to improve the quality of written feedback to assist students in their feed forward process. These performance standards checklist rubrics are a key element of AfL because these rubrics provide the students with comprehensive and timely information about how their assignments or tests meet the requirement of good

performance standards (Boud & Molloy, 2012). In addition, these informative rubrics enabled the students to "refine and calibrate their own judgements" (Boud & Molloy, 2012, p. 711) in their attempt to close their learning gap. With the performance standards checklist rubrics, students were able to position their current competency level, take the necessary actions, and monitor their progress to reach the targeted competency level. Without the performance standards checklist rubrics, it would be a challenge for the students to do peer feedback activities as they would be unsure about how to assess and give feedback about their peers' work. In addition, it would also be a challenge for the students to self-regulate their own learning. Hence, the data collected was focused on possible changes and the impact of the AfL activities, such as peer feedback and using performance standards checklist rubrics, may have had on the teacher's and student's teaching and learning practices.

7.3 Improving AfL lessons using lesson study

Lesson study is a professional learning tool to improve teaching and learning practice (Lieberman, 2009). According to O'Leary (2012), lesson study seeks to involve the learners in the discussion and analysis of the observed lessons, thus positioning the learners' learning at the core, rather than focusing on appraising the learners (Lieberman, 2009). Lesson study was an appropriate tool to contribute to the teacher participant's learning via a formative process and to experience how formative assessment improves their own learning.

Bruce & Ladky's lesson study model was used to help in the planning, implementing and reviewing of the AfL lessons. The first step that the teacher took was to identify the students' learning problems in Social Studies. The teachers thought that for the students to do well in their tests and the GCE O' level examination, they must be able to differentiate between an 'explanation' and a 'description' of a factor when answering the structured essay questions. The majority of students only described the given factors instead of explaining these factors to answer the questions. However, the performance standards checklist rubrics could assist in helping the students to identify whether they are at the 'description' level or the 'explanation' level. Peer feedback activity could also help the students to assess a variety of essays where they could apply their understanding of the performance standards while marking and giving suggestions to their peers. Solving this major

learning problem with the use of AfL strategies could determine whether the students would be able to score a distinction or a mere pass for their GCE O' level Combined Humanities subject.

After identifying the student's learning problems, the teachers planned two peer feedback lessons to help the students to learn the difference between an 'explanation' and a 'description' of factors by incorporating the use of performance standards. This was useful in helping the students to understand what examiners were looking for when they marked the essays, especially in the 'explanation' section of the essays. In addition, the teacher participants felt that in order to help their students in their learning, they must be able to identify their learning problems and to take actions to rectify these learning problems. Hence, the reflection booklets aided the students in monitoring and evaluating their own learning.

Once the lesson plans were reviewed and revised, the teacher participants decided which teacher would administer the peer feedback lesson on Sri Lanka. Yasmin volunteered to teach the lesson first while Xena and Wanda together with the researcher observed the peer feedback lesson taught by Yasmin. In this first peer feedback lesson, as the teacher participants observed the lesson, they took notes on the following areas:

1. Delivery of the peer feedback lessons;
2. Strengths and weaknesses of the peer feedback lessons and possible suggestions to improve on the lesson delivery; and
3. Student's participation levels.

After Yasmin delivered the peer feedback lesson, Xena, Wanda and the researcher met to discuss the strengths, weaknesses and possible areas for improvement to make the lesson better. These post-observation discussions were also held after Xena and Wanda conducted their peer feedback lessons in their respective classes. Hence, the lesson plan became a working document until all the teacher participants had conducted the Sri Lanka peer feedback lesson and improvements had been finalised in the lesson plan.

Throughout the discussions, particular emphasis was placed on the importance of providing constructive feedback to build the teacher participants' confidence in a safe and trusting environment. The following aspects were discussed during the post-lesson observation session:

1. How effective were the performance standards checklist rubrics in enhancing the students' understanding of performance standards;
2. How effective was the peer feedback session in helping students identify what they know and do not know and take actions based on the feedback their peers suggested;
3. How has peer feedback, the setting of learning goals and reflective writing helped students to monitor and self-evaluate their learning and eventually became self-regulated learners;
4. Were students able to identify and differentiate between a 'description' and an 'explanation'; and
5. What was the students' engagement level during the peer feedback activity.

Before the discussion began, the teacher participant who administered the Sri Lanka peer feedback lesson reflected on her own teaching performance and shared what worked well and the challenges she faced during the peer feedback lesson. The other teacher participants then shared their observations. Throughout the observations and discussions, collaborative relationships were grounded in elements of equality and mutuality where the feedback offered was constructive and non-judgemental (Yu, Lau, & Lee, 2012). This meant that the teacher participants could function as a novice or as an expert during the lesson observations (Bennett & Barp, 2008).

After the discussion, the lesson plan was revised by the researcher, taking into account the areas for improvement. This revised lesson plan was then given to the next teacher participant, which was Xena, to conduct her 3X class. The cycle was repeated until all the teacher participants had conducted the peer feedback lesson in their classes. A final meeting was held to summarise the findings and to make recommendations on which aspects of the peer feedback lesson worked and did not work. This entire process was repeated for the second peer feedback lesson on the Northern Ireland conflict. Figure 7 is an illustration of the steps taken to implement, review and revise the peer feedback lesson.
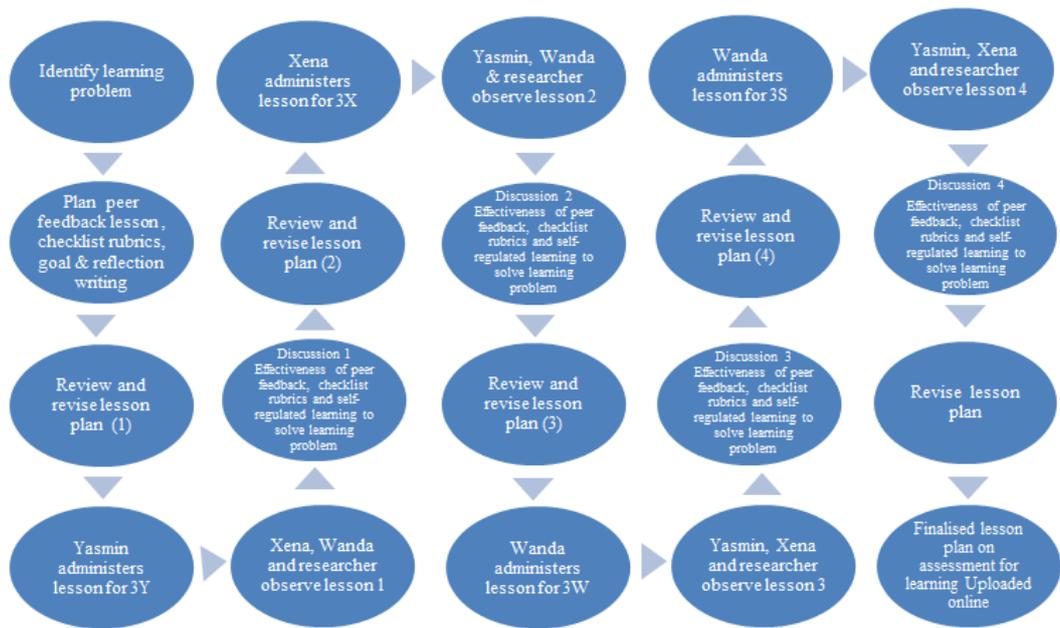
Figure 7. Implementation of AfL in a form of peer feedback using the lesson study framework

7.4 Implementing AfL strategies

7.4.1 Writing learning goals and reflective writing

In order for AfL to be an effective teaching and learning tool, the students must be trained to be self-regulated learners by taking a deep approach/ mastery to their learning (Clark, 2012). A student who takes a deep/ mastery approach towards his/ her learning should understand the skills and knowledge needed to improve learning; make connections with previous knowledge learnt; improve performance by theorising the task; recognise lapses; and reinforce positive meanings and actions inherent to good learning outcomes (Leung & Kember, 2003). Hence, it was appropriate that the student participants were equipped with the necessary skills to help them to evaluate their learning, which was achieved during the learning workshops in Phase Two.

In Phase Three, the students were given the opportunity to be self-regulated learners so that the habit of evaluating their learning could be inculcated. Previously, students only evaluated their learning after each test, which by then was too late to remedy any learning gaps since the teacher would move on to the next topic. However, through reflective writing, the students were made aware of what they

know and do not know at the end of each lesson (Jenson, 2011) so that they could seek help from their teachers or peers immediately to remedy their learning discrepancy before they sat for their summative tests.

In addition, the teacher participants reinforced the importance of self-regulated learning during the first lesson in Phase Three. However, in the third week of Phase Three, the teacher participants decided to go through the process of how to write a good reflection in more detail with the students. This was because after reading the student's reflections, the teachers felt that the students were not evaluating their learning, but instead were reporting on what had happened in class. Hence, to help the students to improve their reflective writing, samples of good and bad reflective writing were shown and clearer guidelines were provided for the students:

1. Learning goals must be specific and link to your reflection;
2. If a learning problem has been identified, an action plan to address this learning problem must be shown;
3. If a strength has been identified, an explanation of how it is seen as a strength must be clearly provided;
4. Evaluate your learning and avoid reporting what the teacher did in class; and
5. Ensure clarity of thought and provide specific evidence of your learning.

There were also changes made to the Social Studies lessons to accommodate the inculcation of self-regulated learning for the students. In Phase Three, all lessons began with the teacher informing the students of the lesson objectives, which had not been previously done. The teacher then gave the students three minutes to write their learning goals based on these lesson objectives. After writing the learning goals in their reflection booklets, the teacher started the lesson. Finally, before the lesson ended, the teacher instructed the students to evaluate their learning based on the learning goals they set earlier during the lesson. The students were given between five to eight minutes to complete their written reflections. These booklets were collected and read by the teacher participants and returned to the students before the next lesson commenced.

Hence, these reflection booklets were informative for both the Social Studies teachers and students as they recorded the learning progress of the students. For the students, it was evidence of their learning and the actions taken to improve their learning. For the teachers, these reflection booklets helped them to reflect on their own teaching effectiveness.

7.4.2 Preparing teachers and students for the peer feedback activity

Before the peer feedback lessons were conducted, the teachers were given the task of designing two Social Studies lessons where peer feedback was the main tool for classroom instruction (completed during the teachers' workshops). Two lesson plans based on the topics of the Sri Lankan conflict (the first peer feedback lesson) and the Northern Ireland conflict (the second peer feedback lesson) were prepared and reviewed by all the teacher participants and the researcher. The 3Y Social Studies teacher volunteered to administer the lesson plan followed by the teachers from classes 3X, 3W and 3S. This ordering was important so that timely changes to the lesson plan could be made so that the next Social Studies teacher could administer the reviewed lesson plan.

As part of the first peer feedback process, the student participants were assigned to write two essays about the causes of conflict in Sri Lanka and the impact of the Northern Ireland conflict. The length of each hand-written essay was to be between 200 and 300 words. These essay assignments were given to the students one week before the peer feedback lessons conducted in Week Three (for the first peer feedback lesson on Sri Lanka) and Week Six (for the second peer feedback lesson on Northern Ireland). These essays were collected by the Social Studies teachers one lesson before the peer feedback lessons were conducted. Prior to the peer feedback lesson, the students were divided into groups of three or four, based on their ability. This was to avoid higher-ability students from dominating the peer feedback discussions, which very often intimidated the lower-ability students in the group.

7.4.3 Implementation of peer feedback activity

In the second part of the peer feedback process, the lesson started with the teacher explaining to the students the lesson objectives for the peer feedback lesson which were as follows:

1. Mark two essays;
2. Provide at least three lots of feedback to improve the essays; and
3. Apply the performance standards when marking the essays.

After writing the objectives, the teacher explained the procedures for the lesson.

After the explanation of the lesson procedures, the students were given three minutes to write their learning goals in their reflection booklets, which were tailored

to the teacher's lesson objectives. The teacher then went through the performance standards for the next 15 minutes with the students before the peer feedback process started. For class 3Y, Yasmin took five minutes to go through the performance standards since she had devoted an hour during the previous lesson to engaging her students in a dialogical debate, discussing the performance standards with them. These dialogical exchanges were important to help the students to understand the performance standards, which could increase the validity of the marking. Through this exercise, the students' confidence levels seemed to improve as they felt that they were capable of providing constructive feedback.

After going through the performance standards, the students were instructed to sit in their groups and were given two or three essays written by their own group members. For the next 45 minutes, these essays were discussed and peer assessed. Worksheets were provided to guide the students during the peer feedback process. These worksheets consisted of the performance standard checklist, a Strengths, Weaknesses and Areas for Improvement (SWA) form and the marking rubrics (see Appendix I). One student was appointed as the main scribe by the group members for each essay, to write the strengths and weaknesses of the essay and to suggest improvements based on the group discussion. This information was written on the SWA form, which was attached to the essays and returned to the writer of the essay to be used as feed forward.

At the end of the peer feedback discussions, the teacher collected the essays and the SWA forms. These essays were returned to the students to be reviewed and revised in the next lesson (a day or two later). This gave the students the opportunity to use the feedback as feed forward to improve on their essay before submitting it to their teacher for marking. Before the lesson ended, the students were instructed to reflect and evaluate on their learning by writing in their reflection booklet what they had learnt and what they had failed to learn during the peer feedback lesson, as well as the actions that they intended to take to close their learning gaps. The teacher collected these reflection booklets at the end of the lesson.

Meanwhile, throughout the peer feedback lesson, the researcher and two teacher participants observed the proceedings of the lesson. These observers had the task of walking around the class to listen and observe the students' behaviours, attitudes and

participation levels throughout the peer discussions. The observers were also given the task of rating the students based on the 'student participation rubrics' where marks were given for the student's contributions towards their own and their peers' learning.

7.4.3.1 Ratings of student's peer feedback participation

The following section describes the data collection tools used for Phase Three: the rating of students' peer feedback participation and performance; the post-intervention survey; interviews with teacher participants; focus group discussions with students; reflection booklets; and samples of students' assignments.

The first data collected were the ratings given to students during the two peer feedback activities conducted in Weeks Three and Six. While one teacher administered the peer feedback lesson, the other two Social Studies teachers and the researcher acted as observers, taking notes on the strengths and weaknesses of the peer feedback lesson itself and awarding the students ratings (on a five-point scale of '0' to '4', see Table 6). The emphasis in the ratings was on how well the students participated during the peer feedback activities. At the end of each peer feedback lesson, the researcher collected these notes and ratings from each teacher observer, photocopied them, and gave each teacher participant the notes and ratings made by the other teacher participants and the researcher. In a post-lesson discussion, the researcher, in consultation with the teacher participants and the class teacher, then confirmed the final participation rating for each student after reviewing all the notes taken by the other two teachers and the researcher.

Table 6 Peer Feedback Rating System

Ratings	Level of participation	Converted to GCE O' level grade
0	Poor	F9
0.5	Fair	E8
1	Fair	D7
1.5	Average	C6
2	Average	C5
2.5	Good	B4
3	Good	B3
3.5	Excellent	A2
4	Excellent	A1

Throughout the peer feedback lessons, the teacher who conducted the lesson moved from one group to another listening to the discussions and offering assistance

when needed. The researcher and the teacher observers walked around the class to note the students' levels of engagement. The teacher observers took between five to 10 minutes to observe each group. There were from nine to 12 groups in each class. Due to the large number of groups in each class, each teacher observer sat with the group and listened to about five to six peer feedback groups per lesson.

While the students were engaged in discussions in their groups, the observers also:

1. Identified students who were engaged in active discussion and those who were not interested in learning from their peers;
2. Noted the task focus of the peer discussions and articulation;
3. Noted the application of the performance standards; and
4. Evaluated the quality of the suggestions offered to improve the given essays.

In addition, each student was given a rating based on four categories: contribution; attitude; focus on tasks; and problem solving (see Table 7).

For each category, the students were rated between '0' to '4'. For example, Student A was rated '4' for 'contribution' when she routinely provided useful ideas during the group discussions and led the group throughout the discussion. For the category 'attitude', Student A was rated '2' as she occasionally voiced negative criticisms of the task and showed a pessimistic attitude towards the peer feedback task. For the category 'focus on the task', Student A was rated '3' as she was focused on the task and knew what was needed to be done to complete the assigned task. In the final category, 'problem-solving', Student A was rated '3' for being able to refine solutions suggested by others. Hence, Student A received a score of '12' out of a possible '16'. This computed raw score was then converted to a rating (by averaging the final score and converting it to a grade equivalent to the GCE O' level grade) (see Table 7).

These ratings allowed the students to be categorised in accordance with their level of participation, which meant that if a student scored '0', it showed that the student failed to complete any of the assigned tasks. Scoring between '3.5' and '4' showed that the student was an active participant who engaged and completed most of the assigned tasks with their peers during their peer feedback learning sessions. This process of creating ratings for student participation was done throughout the two peer feedback activities. The two peer feedback activities' ratings were then

averaged and converted to the GCE O' level grades, which were then used for further analysis.

Table 7 Student Peer Feedback Participation Rubrics

CATEGORY	4	3	2	1	0
Contributions	Routinely provides useful ideas when participating in the group and in classroom discussion. A definite leader who contributes a lot of effort.	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard.	Sometimes provides useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.	Fail to neither provide any ideas nor participate in classroom discussion. Refuse to participate.
Attitude	Never is publicly critical of the project or the work of others. Always has a positive attitude about the task(s).	Rarely is publicly critical of the project or the work of others. Often has a positive attitude about the task(s).	Occasionally is publicly critical of the project or the work of other members of the group. Usually has a positive attitude about the task(s).	Often is publicly critical of the project or the work of other members of the group. Often has a negative attitude about the task(s).	Negative attitude towards the tasks.
Focus on the task	Consistently stays focused on the task and what needs to be done. Very self-directed.	Focuses on the task and what needs to be done most of the time. Other group members can count on this person.	Focuses on the task and what needs to be done some of the time. Other group members must sometimes nag, prod, and remind to keep this person on-task.	Rarely focuses on the task and what needs to be done. Let others do the work.	Fail to focus on the task and what needs to be done.
Problem-solving	Actively looks for and suggests solutions to problems.	Refines solutions suggested by others.	Does not suggest or refine solutions, but is willing to try out solutions suggested by others.	Does not try to solve problems or help others solve problems. Let others do the work.	Does not attempt to solve problems.

7.4.3.2 Marks from peer feedback assignment

Students were assigned to complete an essay during each peer feedback activity. These essays were assessed by the students, submitted to the teacher and returned to

the students for revision. During the review and revision of the essays, the students were given the choice to accept or reject the feedback they received from their group members before submitting the re-written essay to the Social Studies teachers to be marked. These marks from the two essays were collected from the teacher participants and converted to the GCE O' level assessment grades (see Chapter 8, sub-sections 9).

7.4.3.3 Survey

In Phase Three, a post-intervention web-based survey was conducted in the last week of August 2011. During this phase, all the student participants (with the exception of the 11 students who did not participate in the Phase One pre-intervention survey) completed the same set of survey questions that they answered in Phase One. The web-based survey took place in the library for 35 minutes during the Social Studies lesson supervised by the researcher.

The two web-based surveys conducted in Phases One and Three were important as possible changes in the student's perceptions of AfL activities, such as peer feedback, performance standards checklist rubrics, written feedback, goal setting, reflective writing and self-regulated learning, could be analysed.

7.4.3.4 Interviews with teacher participants

Interviews with the teacher participants were conducted on the last day of Term Three before the start of the end-of-year examination. All the interviews were conducted on the same day in the library and lasted for about 75 minutes each.

These interviews helped to examine the changes in the teachers' teaching practice, particularly in the planning of Social Studies lessons, the conduct of the AfL activities, and their perceptions of the effectiveness of AfL strategies in enhancing the students' learning.

The following areas were discussed during the Phase Three interviews with the teacher participants (see Appendix J):

1. Effectiveness of the PLC sessions and learning workshops in implementing AfL strategies;
2. Changes in teaching and learning after the implementation of AfL strategies;
3. Advantages and challenges in using checklist rubrics, peer feedback and reflection booklets; and
4. Sustainability of AfL strategies in Social Studies classrooms at Fairmont.

It can be seen that the interviews focused on the teachers' classroom AfL and teaching practices, the use of performance standards in teaching and the promotion of self-regulated learning among the students. These were essential components in the improvement of learning as a result of using AfL strategies.

7.4.3.5 Focus group discussions

In the Phase Three focus group discussions, students were asked to share their views on the experience they gained from using AfL strategies and how their learning approach changed after the implementation of the AfL strategies. Each focus group discussion took between 65 and 80 minutes and was held in the library after school. The student participants involved in the Phase Three discussions were the same students who participated in the Phase One discussions. This was important so that a pre- and post-comparison could be made about these students' perceptions of AfL strategies.

In these focus group discussions, the researcher facilitated the discussions, as the students were reasonably forthcoming in sharing their experiences and views about the AfL activities. There was a diverse range of answers to the discussion questions and agreements and disagreements were freely discussed (Vicsek, 2010). The student participants were also more critical of their own learning and their teacher's teaching as they seemed to take more responsibility towards their own learning than they did in the first phase. The following aspects were discussed during the focus group discussions (Appendix J):

1. Perceptions of self-regulated learning through the use of the reflection booklet to evaluate learning;
2. Advantages, challenges and possibility of sustaining the use of the reflection booklet;
3. Beliefs about the use of peer feedback to enhance learning;
4. Advantages, challenges and possibilities of sustaining peer feedback;
5. Perceptions of the use of performance standards checklist rubrics to improve the quality of marking and its usefulness as feed forward to improve learning; and
6. Factors that threaten the continual use of AfL strategies.

The data gathered has assisted in examining possible changes in the participants' attitudes, beliefs and behaviours associated with the implementation of AfL strategies.

7.4.3.6 Reflection booklets

In Phase Three, reflection booklets were introduced to all Secondary Three Express Social Studies students (see Figure 8). Each student was given a personalised booklet at the beginning of Phase Three with guidelines on how to write reflections attached to the first page of the booklet. At the end of Phase Three, all the reflection booklets were collected by the researcher for analysis. 161 students returned the reflection booklets while seven students claimed that they had misplaced the booklets.
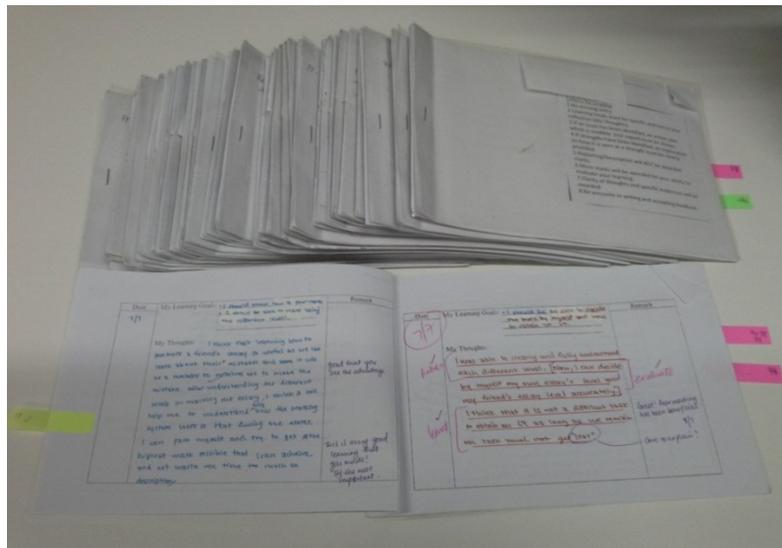
Figure 8. Reflection booklets for students to write their learning goals and reflect on their learning.

Before the start of each Social Studies lesson, in order to help the students to become more self-regulated learners, the teachers informed the students of the lesson objectives. Based on these lesson objectives, the students wrote the learning goals which they wanted to accomplish. At the end of the lesson, a period of eight minutes was given for the students to review their learning goals and to evaluate their learning.

However, not all the teacher participants gave the students time to reflect. For class 3Y, the students were often told to write their reflections at home as Yasmin felt that she needed time to cover the syllabus. For classes 3S, 3X and 3W, instead of eight minutes given for reflective writing, most of the time the students were given three minutes to complete their evaluation, which was a challenge for the students.

It was agreed with the teachers during the learning workshops that the reflection booklets must be collected at the end of every lesson so that the teachers could receive timely feedback about their teaching and their students' learning. However, all the teachers collected the reflection booklets only on a weekly basis because it was considered to be too difficult to collect and return these booklets to the students in time for the next lesson.

These reflection booklets were then read by the teachers to understand the learning progress of the students and to rectify any learning misconceptions that the students may have in the next lesson. As agreed during the learning workshops, the teachers were required to write their comments in response to the students' learning reflections. Unfortunately, due to the teachers' busy schedule, this was not always accomplished. Wanda was the only teacher who wrote comments on 3S and 3W reflection entries in Weeks Three and Six. Meanwhile, Xena commented on ten 3X student's entries while Yasmin wrote none for the 3Y class entries. Nevertheless, the researcher read all the students' entries and wrote comments to help the students to assess their learning. In addition, the students' reflective writings were graded by the researcher in Weeks 3, 5 and 8 during Phase Three of the research.

In addition, the reflection entries provided important information that was discussed every week during the PLC session. These discussions were not only constructive in informing the teachers of their students' learning progress but also provided useful feedback for the teachers to reflect on their own teaching effectiveness. A weekly summary of the students' learning difficulties was compiled by the researcher and discussed with the teacher participants, particularly in relation to how best to tackle the students' learning gaps.

As the main aim of the reflection booklets was to instil the habit of self-regulated learning among the students, they were given time to explore and familiarise themselves with the practice of self-evaluating their learning, which was relatively new to them (Costa & Kallick, 2008). As a result, the comments written by the researcher were meant to direct the students about how to evaluate their learning and not just to report on or describe what the teacher was doing in class.

Two entries in the students' reflection booklets were particularly important in this study. The first entry was from the first peer feedback lesson on Sri Lanka and the

second entry was from the second peer feedback lesson on Northern Ireland. The data gathered was valuable as it provided useful insights about the students' perceptions of the benefits gained and the challenges faced in participation in peer feedback.

With the introduction of the reflection booklet, the students were given an opportunity to become more self-regulating as learners, which was essential for AfL strategies to effectively enhance learning. In addition, the reflection booklet was informative as the students were able to express their learning concerns privately with their Social Studies teacher and the researcher. This was helpful as the quiet students were given a voice to inform their teacher about their learning difficulties without feeling uncomfortable.

7.4.3.7 Samples of student's work and test papers

In Phase Three, samples of students' work were collected to examine possible changes in the way the teacher participant's wrote their feedback to the students. These data were useful because they provided information about whether the inclusion of the checklist rubrics, in which the performance standards were delineated, allowed the students to comprehend and use the written feedback as feed forward to improve their learning. The samples of the students' work were also helpful for examining the possible impact of the introduction of the performance standards checklist rubrics on the students' work.

A total of 161 Common Test (CT2) papers sat by the students in Phase Three were also collected. These CT2 papers were analysed to understand the impact of the AfL practices on the students' learning.

7.5 Concluding remarks

In Phase Two, both the teachers and the students underwent learning sessions to equip them with important teaching and learning skills associated with the implementation of AfL strategies in Phase Three. The next significant stage was using AfL strategies as part of the everyday Social Studies classroom instruction (see Table 5 for the summary of the Phase Three procedure). With the introduction of AfL strategies in teaching and learning practice, the teachers and students were able to experience the possible contributions of AfL strategies to improved student

learning strategies and outcomes. The post-intervention survey, interviews, and focus group discussions were central for the analysis of the participants' perceptions of the effectiveness of assessment for, and of, learning and the challenges they faced when using AfL strategies. Additionally, the data were valuable for helping to determine whether AfL strategies may be sustained into the future at Fairmont.

Chapter 8 Research Methods V: Phase Four & Post-Phase Four The Impact & Outcomes

8.1 Scope of the chapter

This chapter explains the data collection tools that were used to gather information about the outcomes and impacts of the implementation of AfL strategies in Phase Four and Post-Phase Four of the research.

8.2 Phase Four: Research design

Phase Four of the research was designed to answer the third research question, "what are the challenges for sustaining AfL and which strategies might be the most effective to sustain AfL?" This phase was conducted from February to March 2012 after the official November/ December school holiday break. In this phase, data were collected to examine the challenges that the teacher and student participants faced, which might prevent them from using AfL strategies in their Social Studies classrooms. In addition, this phase was crucial to an understanding of the possibility of sustaining and integrating AfL strategies in an assessment of the learning setting.

Due to the approaching GCE O' level examination, minimal contact was made with the teacher and student participants to avoid disrupting their preparation for this important milestone in the students' educational path. Hence, a decision was made to observe the Social Studies classes for only one month and to involve 17 out of the 40 students who participated in the Phase One and Three focus groups for a follow-up discussion session (see Table 5 for the summary of the Phase Four procedure).

8.3 Changes in teaching allocation

In Phase Four, due to the upcoming GCE O' level examination in late October 2012, the school decided to replace Xena and Wanda with two experienced Social Studies teachers. Yasmin was the only teacher participant who was involved in Phase Four as she was deployed to teach classes 3X and 3Y in 2012.

8.4 Lesson observations

Lesson observations were conducted in all four of the Social Studies classes. However, for classes 3S and 3W, the observations were conducted for only two

weeks because the new Social Studies teachers were not part of the research conducted in the earlier phases. Hence, the observations made for two weeks were mainly to establish whether the students were setting their own learning goals and reflecting on their learning during their Social Studies lessons. Meanwhile, seven Social Studies lessons were observed for classes 3X and 3Y respectively.

The data collected from these observations were useful for understanding the role of the teachers in promoting students' self-regulated learning. It was also imperative to observe how well the students were able to monitor their own learning without the teacher's direction and guidance. These observations were important to gauge whether AfL strategies were still being used by the students even though these strategies were not structured into the Social Studies lessons.

These lesson observations focused on examining the following:

a. Evidence of teachers informing students of the teaching objectives;
b. Evidence of students engaging in self-regulated learning such as setting learning goals and reflecting on their learning;
c. Evidence of performance standards checklist rubrics being used in teacher's written feedback;
d. Evidence of peer feedback being conducted as part of classroom instruction; and
e. Evidence of students using feed forward to improve their learning.

The data gathered based on these lesson observations could shed light on whether the teaching and learning strategies had changed over the period of the research, since the teacher and student participants were now trained and had used AfL strategies in Phase Three. Evidence from the lesson observations might show how the demand to perform well in the GCE O' level examination could influence the choice of the teaching and learning practice. Hence, the Phase Four lesson observations were critical in considering the possibility of sustaining the ongoing use of AfL strategies at Fairmont.

8.5 Focus group discussions

The final focus group discussions were conducted in the first week of March 2012. In Phase Four of the research, a "multistage purposeful random" (Collins, 2010, p. 359) selection with "identical relationship" (Onwuegbuzie & Collins, 2007, p. 292) was conducted to select the student participants for the final focus group

discussions. Here, a multistage purposeful random selection refers to student participants representing a sample in two or more stages (Phases One and Three). The first stage involved random selection of the student participants for the focus group discussions in Phases One and Three, followed by purposive selection of participants in Phase Four (Collins, 2010). An identical relationship meant that the same sample members who participated in the quantitative (survey) and the qualitative phases (focus group discussions in Phases One and Three) were involved in Phase Four focus group discussions (Onwuegbuzie & Collins, 2007).

This selection process was chosen to ensure minimal disruption of the student participants' after-school schedules. Out of the 40 students who participated in the Phase One and Three focus group discussions, 20 were invited to be part of the last focus group sessions based on how forthcoming the participants were in sharing their experiences about AfL strategies. 17 student participants expressed their interest to take part in the focus group discussions. There was a good mix of male and female students and each group consisted of at least one student from a lower, middle or higher-ability group.

The 17 student participants were divided into four groups representing their respective Social Studies classes. Each focus group discussion took about 70 minutes to complete and was held in the Conference Room to ensure privacy and confidentiality.

The following areas were discussed during the focus group sessions (see Appendix K):

1. Evidence of students/ teacher using AfL strategies in their Social Studies learning;
2. Students' perceptions of teachers no longer using AfL strategies;
3. Evidence of students' self-regulating their learning;
4. Reasons why teaching and learning practices might have changed;
5. Evidence of how not using AfL strategies might affect student's learning; and
6. Factors that could sustain the use of AfL strategies.

The final focus group discussions were vital because the student participants shared the positives and the difficulties they faced when using AfL strategies. The students also shared how they 'lost' learning opportunities when AfL activities were no longer used as part of Social Studies teaching and learning practice.

8.6 Teacher interviews

The final interviews with the Social Studies teacher participants were conducted in the first week of March 2012. Each of the teacher participants, Xena, Wanda and Yasmin, were interviewed separately on the same day. Each interview took about 60 minutes to complete and was conducted in the Conference Room to ensure privacy and confidentiality.

Even though Xena and Wanda no longer taught classes 3X and 3W in 2012, information on how much they had used AfL strategies in Term Four 2011 was important for understanding the possibility of sustaining AfL practice at Fairmont. In Phase Four, Yasmin was the only teacher participant who had taught her 3Y class in 2012. Yasmin also took over Xena's 3X Social Studies class. Hence, it was important to examine whether Yasmin was still using AfL strategies in 2012 with her 3X and 3Y Social Studies classes, since 2012 was a vital year for these graduating classes sitting for the GCE O' level examination.

During the Phase Four interviews, the teacher participants were asked questions about their teaching practice and the use of AfL strategies (see Appendix K):

1. Evidence of teachers changing their teaching practice to incorporate AfL strategies;
2. Factors that helped to sustain the use of AfL strategies and factors that might have made it difficult to sustain AfL strategies; and
3. Ways to incorporate assessment for, and of, learning strategies into the Social Studies syllabus.

The final interviews with the teachers were vital for understanding the possibility of sustaining AfL strategies in the Social Studies classroom. Understanding the challenges the teachers faced while using these strategies could lead to recommendations that could encourage teachers to use these strategies as part of their classroom activities.

8.7 Samples of students' test papers

Sixty samples of students' test papers were also collected from the 3X and 3Y Social Studies classes to examine the quality of the teacher's written feedback, particularly the continuous use of the performance standards checklist rubric, which was useful in improving the quality of the teacher's written feedback in Phase Three

of the research. Since Yasmin was focusing on completing the syllabus to prepare the students for the GCE O' level examination, no assignment was given to the students except for one test.

Evidence gathered from these data was used to engage the teachers and students with how quality written feedback might have improved the students' learning experience. Understanding the challenges the teachers faced when preparing and using the performance standards checklist rubric might also increase awareness of the teachers' heavy workloads and the time they needed, and often claimed not to have, to invest in preparing the checklist rubrics and eventually marking assignments and test papers.

8.8 Post-Phase Four (January 2013): GCE O' level results

The post-Phase Four of the research was designed to answer the final research question, "might AfL strategies have contributed to improved high stakes assessment results?" In this phase, the focus was on the possible impact of participation and performance in peer feedback activity on the GCE O' level Combined Humanities results at Fairmont.

The final data collected were the GCE O' level grades of students from the 2010 to 2012 cohorts. The student participants at Fairmont sat for this examination in early November 2012. The GCE O' level results were released in January 2013. Students were graded based on the following grading system: A1 and A2 were distinction scores, B3 and B4 were merit scores, C5 and C6 were credit scores, D7 was sub Pass/ Fail and E8 and F9 were fail scores (see Table 8).

The GCE O' level results were used to compare the different cohorts' performance, in particular the 2012 cohort that used AfL strategies in their classroom instructions and the previous cohorts (2010 and 2011), who were predominantly taught using assessment of learning methods. This was helpful to consider whether the use of AfL strategies might have somehow influenced the summative results of the students.

Table 8 Rating System of GCE O' Level Examination

Grade	Range of marks	Grade Description
A1	75 to 100	Distinction
A2	70 to 74	Distinction
B3	65 to 69	Merit
B4	60 to 64	Merit
C5	55 to 59	Credit
C6	50 to 24	Credit
D7	45 to 49	Sub-Pass/Fail
E8	40 to 44	Fail
F9	0 to 39	Fail

8.9 Concluding remarks

In Phase Four, the first objective was to determine the extent to which the participants still used AfL strategies in their teaching and learning practice. Whether the participants still used, or no longer used, AfL strategies in their classrooms, it would be important to examine the factors that influenced the participants' decision. In this phase, the views of the participants were sought to understand further their teaching and learning experiences particularly when AfL strategies were not used in Social Studies. Finally, the possibility of integrating AfL strategies in a summative setting was also discussed with the participants.

Chapter 9 Research Methods VI: Data Analysis & Preliminary Analyses

9.1 Scope of the chapter

This chapter describes the strategies used for the data analysis. As the mixed methods design comprised both quantitative and qualitative research approaches, three main forms of data were included in the analysis procedure. The first data were numerical data collected from the students' perceptions of teaching and learning surveys, Fairmont's 2010 to 2012 GCE O' level Combined Humanities results, participation and performance scores from the two peer feedback activities, Common Tests scores and the reflection booklet scores. The second set of data was from the transcriptions of the tape-recorded interviews and focus group discussions, lesson observation notes and samples of the students' assignments. The final set of data was from two peer feedback reflection entries written by the students.

9.2 Qualitative data analysis

This section discusses how the transcripts from the interviews and focus group discussions were coded using open, axial and selective coding to organise and analyse the data based on the themes determined earlier during the research and the new themes that emerged during the course of the data analysis. In addition, a sample of how the students' assignments were analysed to determine the quality of the teachers' written feedback is explained.

9.2.1 Transcripts from interviews and focus group discussions

This section examines how the interview and focus group discussion transcriptions were analysed, particularly how the vast amount of data were managed and reduced through the process of thematic classification (Jones, 2007). As the qualitative data were inclined to overlap and were designed to be iterative (Creswell & Plano Clark, 2007; Nastasi, et al., 2010), the qualitative data analyses were carried out concurrently with the data collection during the different phases of the research. Hence, the qualitative data were analysed during the data collection process as well as during the intervals in the fieldwork.

A deductive analysis was used to "test whether data [were] consistent with prior assumptions" (Thomas, 2003, p. 238) or the themes constructed from the literature

review early in the research. Room was also made to allow for new findings to emerge and to contest assumptions and themes made earlier (Thomas, 2003) (refer to Chapter 5, Sections 2.3, 2.4, 2.5 for the themes). The themes were useful in managing the data allowing for irrelevant information to be omitted from the analysis and interpretation process.

During the qualitative data analysis, the researcher's blog entries and reflections were helpful in checking the researcher's interpretations, thoughts and beliefs (Asselin, 2003). A list of annotations was also made during the coding of the transcripts (Mehra, 2002) which was a key reflexive strategy since understanding of any phenomenon could be tempered by the researcher's "experience, bias and knowledge" (Jones, 2007, p. 64). The annotations recorded were remarks on the emerging concepts, the researcher's reflections, constraints and experiences gathered from the interactions with the participants during the interviews, focus group discussions and classroom observations.

In addition, the teacher and student participants read the transcriptions and interpretations of the researcher, which helped to "corroborate the linkage between data collected, analysis and findings" (Asselin, 2003, p. 100). This process of member checking was useful because additional insights were gathered, which gave the research participants an opportunity to voice their views and confirm the interpretations made by the researcher (Belk, 2008). Other than member checking, triangulation was used during data analysis to enhance the validity of the interpretations of the data (Thomas, 2011; Thurmond, 2001). Data used during triangulation were mainly from the lesson observation notes and the samples of student assignments.

All data gathered from the focus group discussions and interviews were analysed using NVivo 9, which is a support tool to manage the vast amount of transcribed data. The following three questions from Carcary's (2011, p. 21) research were used as a guide to separate the primary narrative and the researcher's interpretation throughout the analysis process:

1. What does the text say?
2. Why does the text say what it does? and
3. What is my understanding of what is taking place?

These questions were useful to remind the researcher to be constantly aware of personal biases and to limit any personal involvement with the materials (Patton, 2001).

The first step taken when using NVivo 9 was to import the transcripts of the 20 focus group discussions and the 15 interviews, which were transcribed verbatim, using Microsoft Word, to the NVivo 9 software. The next phase was to code the data using un-hierarchical or open coding. Open coding, or in-vivo coding, was adopted by reading all the data and sorting them by looking for meaning from the words, phrases, sentences, behaviour patterns, (Creswell, 2012; Strauss, 1987) participants' perceptions, changes in students' and teachers' learning and teaching, effective teaching and learning strategies, et cetera, which appeared regularly and which were raised by the participants during the interviews and focus group discussion sessions.

The following excerpt (Figure 9) from an interview with Suzie in Phase One explains how the open coding was undertaken. In this example, the researcher has used the decontextualizing method "which strips textual segments from their source documents" (Jones, 2007). According to Tesch (1990), this is helpful during the process of analysis as "a segment of text that is comprehensible by itself and contains one idea, episode, or piece of information" (p. 116) is easier to analyse as it still maintains its full contextual meaning. The transcribed interview was read line by line to identify the relevant stand-alone units and codes. For example, the first and second sentences were a stand-alone unit with full contextual meaning where Suzie stated that there was a need to train students to manage time during the O' level examinations, which was coded as 'strategies to do well in the GCE O' level summative examination'. The third sentence was another stand-alone unit, where Suzie mentioned how the teacher wished there was dialogue in class, which was coded as 'interactions during lessons'. The fourth and fifth sentences were another stand-alone unit where the teacher wished that the students could be independent and do in-depth readings, which was coded as 'independent learning'. The sixth and seventh sentences were meaningful when connections were made with the information stated earlier that students would be able to engage in dialogue if they started using AfL strategies in Secondary Three instead of in Secondary Four, when the O' level examination took the centre stage in teaching and learning. This was

coded as 'introducing AfL strategies early in Social Studies'. However, the last sentence lost the meaning and connection altogether from the earlier sentences.

Sometimes O' level we need to train them time, you know, how to manage their time. So I think, yeah, that is the conflict. But the thing is, I try to discuss issues with them in class, and I don't get to hear everyone response., most of the time I hear myself, so yeah, you know, I actually, I am very eager to discuss issues but I think most of it comes from me. I wish they read up a little bit and you know, really go in depth. But to assess, yeah, then there is a conflict, the time yeah. Maybe the Sec 3 we can start. Why not? And then Sec 4 you know everything is so tight and then we can stop for the Sec 4s. And then they can by the time they will go Secondary 4, they will put in class, they will bring up the issues because they are used to it in Sec 3. Yes, but the curriculum is really a conflict, yeah, the time.

Figure 9. Example of how coding was administered.

As many codes or free nodes (the term used in NVivo) were created during the initial stage of open coding, the nodes seemed to be disconnected and illogical in terms of their relationships with the other nodes. Examples of the disconnected nodes during Phase One focus group discussions were 'reasons for going to school'; 'how teacher starts Social Studies lesson'; 'who is responsible for students' learning'; 'helpline for students to get help in their learning'; 'how students view their ability'; 'students' preference to seek help'; and 'students' perceptions of self-regulated learning'. In order to make meaningful connections among these nodes, axial coding was conducted to categorise these codes into the overall hierarchical structure of the tree nodes.

During the axial coding stage, all the initial nodes were reviewed. In this stage, one open coding node was selected as a tentative thematic category and connected to the other nodes (Creswell, 2012). For example, the "students' perception of self-regulated learning" was selected as the thematic category and other nodes related to this theme were connected (Creswell, 2012) such as 'factors that influence students' perception of self-regulated learning'; 'actions taken to enhance self-regulated learning'; 'situational factors that influence the use of self-regulated learning'; and 'outcomes of using self-regulated learning'. A process of re-categorising was also undertaken to refine the themes further. During this process, the constant comparative method was used, where the data were reviewed again during the

different phases of the research together with other data such as lesson observation notes (Thomas, 2011).

The final phase of the coding process was selective coding. This step involved "writing out the storyline that interconnects" (Creswell, 2012, p. 426) the factors that influenced the themes. For example, the main reason the students were apprehensive about using peer feedback in their learning was due to the lack of trust that they have in regard to their peers' feedback. Students were uncertain of the reliability of the feedback as they questioned the credibility of their peers' ability and knowledge to give feedback. Hence, this storyline fitted under the theme 'students' perceptions of problems in using peer feedback activity'. In addition, the storylines written were heavily narrative, so direct quotes from the participants were used to help the reader to experience and understand the teacher and student participants' worlds, particularly the success stories and struggles they faced when using AfL strategies (Ary, et al., 2005; Marshall, 1989). Figure 10 shows the steps taken throughout the process of coding the qualitative data.
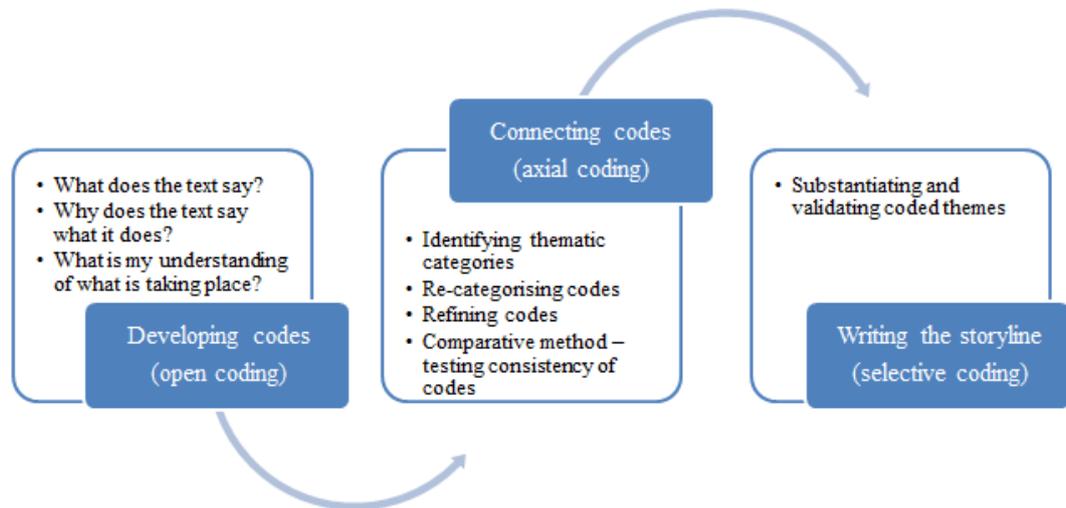
Figure 10. The process of coding and identifying themes.

9.2.2 Samples of students' work

The next data that were analysed were the samples of the students' essay assignments. This was undertaken in order to examine the teachers' marking and feedback in helping students to improve their learning. According to Weaver (2006),

feedback that highlights the students' strengths and weaknesses assists students to "assess their performance and make improvements to future work" (p. 379). Hence, it was important to understand how the written feedback was used by the Social Studies teachers to help their students in their learning.

At least 10 assignments were collected from the teacher participants from each class in Phases One, Three and Four. These assignments were photocopied and analysed using the 'move analysis' approach. In each phase of the research, the results from the analysis were used as a discussion theme during the interviews and focus group discussions. For example, one discussion theme from the Phase One and Three interviews and focus group discussions was how the students made use of the written feedback to improve their learning. Through these discussions, the researcher understood how the quality of the written feedback affected the students' learning, especially when the written feedback was lacking in guidance, specificity and clarity, and was not linked to the performance standards. In Phase Three, after the introduction of the performance standards checklist rubrics, the teacher and student participants were asked to share their views about how the checklist rubrics might have improved the quality of the written feedback and how they may have helped students to understand and make use of the feedback as feed forward. Finally, in Phase Four, the samples of students' assignments from classes 3X and 3Y showed that the feedback written was back to the Phase One stage in its quality. As a result of this discovery, the participants were asked how their learning and teaching were affected when the performance standard checklist rubrics were no longer used.

Figure 11 shows how a student essay was analysed using the 'move analysis' approach. This analysis was undertaken to determine the quality of the teacher's written feedback. All the teachers' written comments were coded to give a general idea about the effectiveness of the written feedback and the possibility of using these comments as feed forward to enhance learning. The participants were also asked how they interpreted the 'ticks', 'levels/ marks' or 'calling attention to weakness using one word' in their attempt to use these comments to help students to improve their learning.

The analysis of the written feedback from the students' assignments was useful in understanding how the teachers marked the assignment, the value placed on the

comments, and how the written feedback helped to complete the feedback loop and may have assisted the students to become self-regulated learners.

Figure 11. Coding of a student assignment.

9.2.3 Reflection booklets

A total of 161 reflection booklets were graded by the researcher (see Chapter 7, sub-sections 4.3.6 for guidelines). Grades were given based on an overall impression using the following criteria:

1. Learning goals must be specific and linked to the reflective writing;
2. If a learning problem is identified, an action plan which is credible/ attainable must be shown;
3. If strengths have been identified, an explanation of how each is seen as a strength must be clearly written; and
4. Students must evaluate their learning and not simply repeat information from the textbook.

Marks given ranged from a minimum of '1' mark (poor) to a maximum of '10' marks (excellent). The 3Y and 3X classes' reflection booklets were graded three times while the 3S and 3W classes were graded twice depending on when the teacher participants submitted the booklets for grading. Only the final grading entry completed on Week 8 of Phase Three was used in the hierarchical regression analysis. This decision was made because by Week 8, the students were familiar with setting learning goals and evaluating their learning, as compared to the first few entries where the students were describing what the teacher was doing in class or copying information from the textbook instead of evaluating what they had learnt.

9.3 Fused data analysis (qualitative to quantitative)

The fused data analysis strategy (Bazeley, 2003) was used to analyse the peer feedback entries from the reflection booklets. According to Bazeley (2003), research that uses sequential analysis of mixed methods allows fused data analysis to transform,

> *qualitative coding and matrices into a format which allows statistical analysis ... the 'fusing' of analysis then takes the researcher beyond blending of different sources to the place where the same sources are used in different but interdependent ways in order to more fully understand the topic (p. 385).*

Hence, a multiple response method was used to analyse the change in students' perceptions of the peer feedback activity by examining the students' learning reflection responses to the two peer feedback activities on the Sri Lanka and Northern Ireland conflicts.

The multiple response set was seen as an appropriate strategy to analyse the students' reflections, because the students were allowed to respond freely when they reflected on the stipulated open-ended question, 'has peer feedback contributed to your learning?' Hence, to consolidate the multiple dichotomous responses, analysing

the frequencies of the variables was seen as a suitable strategy to manage and make sense of the enormous volume of data (De Vaus, 2002). The use of frequency counts during the content analysis could also "enhance the presentation of results or … gauge the strength of a phenomenon or experience" (Fakis, Hilliam, Stoneley, & Townend, 2013, p. 2). The teacher participants felt that in order to help the students to be self-regulated learners during the reflection-writing process, the students were encouraged to reflect on the following three questions: what were the benefits that the students gained from the peer feedback activity that contributed to their learning; what were the challenges that the students faced as they participated in the peer feedback activity; and what actions would the students take to close their incompetency gap.

The first step taken towards analysing the two students' reflection entries on peer feedback was to create a codebook (see Appendix L). The researcher created codes as the reflection entries were read for the first time. These codes were further refined when the reflections were read for the second time. A total of four cycles of coding and recoding the entries was undertaken to ensure that during the coding process of categorisation, meaning would not be lost (Bazeley, 2010). The following list shows the final codes created that represented the students' perceptions of the peer feedback activity:

1. Action taken to close learning incompetency;
2. Learnt content/ skills and knew how to avoid making same mistake;
3. Performance standards checklist rubrics guided students during peer assessment;
4. Identified peers' weaknesses and strengths;
5. Teacher assisted students during peer feedback activity;
6. Students knew how to give feedback or mark;
7. Opportunity to evaluate own learning;
8. Participating in peer feedback has benefitted students in their learning;
9. Group members performed well in giving feedback;
10. Group had effective discussion;
11. Students could improve their essay from feedback given by their peers;
12. Students believed they gave or received feedback to/ from their peers;
13. Students needed more time to assess and give feedback;
14. Peer feedback a good method to learn from assessing variety of essays;
15. Learnt how to be an examiner;
16. Peer feedback helped students to do well in assignments;
17. Peers helped to clarify doubts;
18. Peer feedback activity was enjoyable;
19. Students marked accurately;
20. Students marked with honesty;

21. Wanted to do peer feedback again; and
22. Teacher to mark assignments because it was more accurate.

Based on the entries, the researcher gave each student a score for each of the above-mentioned codes using an Excel spreadsheet. For example (see Figure 12), Student A reflected on his learning by reporting what he did during the peer feedback session. From the reflection written by Student A, it can be seen that he was able to identify his peer's main weakness when he highlighted that the written essay focused only on one impact of the Northern Ireland conflict instead of the three impacts that were required to be written based on the question. Hence, this section was coded as 'identified peers weaknesses'. Student A further explained how he awarded the marks using the performance standards checklist rubric. Student A's ability to award marks was coded as 'student knew how to award marks'. Since, he was able to award marks with reference to the performance standards checklist rubrics, another code was identified – 'performance standards checklist rubrics guided students during peer assessment'. Student A also highlighted that his peer feedback group members were not effective during the discussion, as a member did not cooperate well with the others. This section was coded as 'group had no effective discussion' and 'group members did not perform well in giving feedback'.
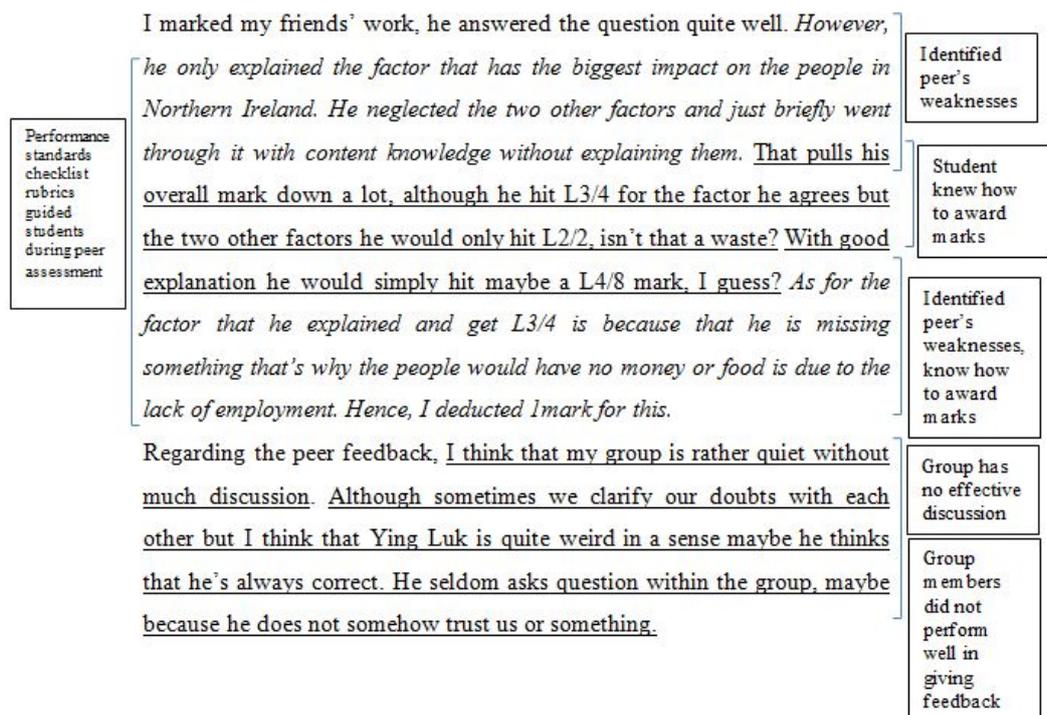
Figure 12. Coding on Student A's reflection on the peer feedback activity.

In addition, when a student indicated that they had 'learnt' during the peer feedback activity in their reflection booklet, this was counted as one entry to show that the student had learnt. Only one entry of 'learnt' was recorded despite the student writing several times that they had learnt different skills or content. For example, a student wrote that they had learnt the following:

> *Today I have <u>learnt about writing skills</u> and <u>knew how to avoid making the same mistake</u>, able to spot own mistakes such as missing factors and <u>learnt to mark accurately</u> and identified current competency level using the performance standards checklist rubrics.*

Even though, the student identified that he had learnt three skills: learnt about writing skills; knew how to avoid making the same mistake; and learnt to mark accurately, only one entry of 'learnt' per student was recorded. This was done to prevent inflating the numbers of 'learnt' mentioned by each student in their reflections.

By analysing the frequency of the student responses from the students' peer feedback learning reflections, conclusions could be drawn about the students' responses towards peer feedback. These conclusions included the benefits gained and the challenges faced as the students gradually became more familiar with the rationale and structures of participating in peer feedback.

9.4 Quantitative data analysis

This section discusses how the numerical data from the two web-based surveys and the peer feedback participation and performance scores in relation to the GCE O' level Combined Humanities examination results were analysed.

9.4.1 Web-based surveys

The web-based surveys were conducted on two occasions – before and after the intervention. Before any analysis was conducted on the survey data, an inter-item correlation matrix using SPSS 20 was carried out. The inter-item analysis was used to check whether each item was loaded on a single factor and correlated with every other item. In addition, the inter-item correlation matrix provided important information as it tested the internal consistency of the survey items. In an ideal situation, each item should be correlated with the other items measuring the same

construct. Nunnaly & Bernstein (1994) recommend that items that do not correlate with other items that measure the same construct be reconsidered so as to improve internal consistency. In the present study, a decision was made to drop a few items to improve internal consistency.

The following section describes how the inter-item correlation matrix was conducted. The first step was to categorise the survey items together into constructs or factors based on face validity. Although, face validity is considered to be a "weak measure of validity, its importance cannot be underestimated" (Udina, 2012, p. 199). Turner (1979) argues that some measures must be face-valid in order to avoid "logical regress" or "circularity" (p. 86). Hence, face validity was the initial action taken to group the items into factors before deleting those items that affected internal consistency.

The second step was to determine the alpha to indicate internal consistency. The alpha used in the present research was .70 which Nunnaly and Bernstein (1994) consider to be an acceptable minimum for items that are "in the early stages of research" (p. 265) as compared to a minimum reliability of .80 for basic research and .90 for research that involves policy-making. However, according to Lance, Butts & Michels (2006), reliability of .70 should not be seen as a "universal standard" as consideration must be taken of the following contingencies: "attenuation due to unreliability and the standard error of measurement" (p. 206). Even though an alpha of .70 was used as a guide, the first factor, 'students' responsibility for learning' was still retained, despite having an alpha below .70 because, according to Schmitt (1996), "there is no sacred level of acceptable or unacceptable level of alpha. In some cases, measures with (by conventional standards) low levels of alpha may still be quite useful" (p. 353). In addition, Cortina (1993) states that these guidelines must be employed with caution since the value of alpha varies depending on the number of items on the scale.

The third step was to use the mean inter-item correlation as "a guide of item homogeneity in a uni-dimensional scale" (Piedmont & Hyland, 1993, p. 370) which would be a better indicator of internal consistency (Clark & Watson, 1995). Briggs & Cheek (1986) suggest that "the optimal level of homogeneity occurs when the mean inter-item correlation is in the .20 to .40 range" (p. 115). Clark & Watson (1995)

recommend that the mean inter-item correlation should fall between the range of .15 to .50 "because the optimal value necessarily will vary with the generality versus specificity of the target construct" (p. 316). Clark & Watson (1995) state that if a broader construct is being measured, .15 to .20 is desirable, while a narrower construct would suffice with .40 to .50. In the present study, a range between .15 to .50 mean inter-item correlation scales were used to examine the internal consistency of the items.

There were seven factors created that encompassed students' perceptions of Social Studies teaching and learning. The factors were:

1. Students' responsibility for learning;
2. Operating/ functioning as a self-regulated learner;
3. Positive outcomes of giving and receiving peer feedback;
4. Negative outcomes of giving and receiving peer feedback;
5. Usefulness of feedback to improve learning and performance;
6. Improving learning through quality teacher feedback; and
7. Timing of feedback for effective learning.

The first factor, 'students' responsibility for learning', focused on the role of students in taking ownership for their own learning. There were seven items for this factor. For this factor, the alpha was .52 for the pre-intervention survey (mean inter-item .17) and .64 for the post-intervention survey (mean inter-item .24). Removing any of the items did not lead to improvement in the alpha or the mean inter-item. Despite the alpha being lower than .70 and the mean inter-item correlation being .17 (which was still acceptable for Clark & Watson (1995)), a decision was made to keep these factors and items. This was because this factor encompassed a broad construct about the students' perceptions of taking charge of their learning, which was a necessary element in self-regulated learning in AfL practice. However, the lower reliability statistics suggest that this factor should be interpreted with caution.

The second factor, 'operating/ functioning as a self-regulated learner', focused on how students perceived themselves as self-regulated learners, where they are able to set learning goals, identify their current competency level, and take actions to address any competency gaps. There were 18 items for this factor. The alpha was .74 for the pre-intervention survey (mean inter-item .15) and .63 for the post-intervention survey (mean inter-item .11). Two items were dropped to improve internal

consistency. The items dropped were 'I can score high marks but I still do not understand the Social Studies content taught by my teacher' and 'I have interest in learning beyond what is useful for my Social Studies test/ exam'. By removing these two items, the alpha increased to .79 for the pre-intervention survey (mean inter-item .20) and .72 for the post-intervention survey (mean inter-item .16).

The third factor, 'positive outcomes of giving and receiving peer feedback', focused on the students' positive experience and the benefits that they gained when they engaged in the peer feedback activity. All 15 items for this factor were kept. The alpha was .81 for the pre-intervention survey (mean inter-item .24) and .85 for the post-intervention survey (mean inter-item .31).

The fourth factor, 'negative outcomes of giving and receiving peer feedback', focused on the negative outcomes, particularly how the students felt when the given feedback affected them emotionally and had not added value to their learning process. All 10 items for this factor were kept as the alpha was .78 for the pre-intervention survey (inter-item .27) and .79 for the post-intervention survey (inter-item .27).

The fifth factor, 'usefulness of feedback to improve learning and performance', focused on how the feedback was relevant to the students in terms of understanding their competency gap based on the performance standards. There were seven items for this factor. The alpha was .57 for the pre-intervention survey (mean inter-item .21) and .61 for the post-intervention survey (mean inter-item .26). Two items were removed to improve internal consistency. The items deleted were 'I ask my teacher for feedback and comments if I am only given marks/ grade' and 'feedback is only useful when I receive low marks/ grade in Social Studies'. By removing these items, the alpha increased to .83 for the pre-intervention survey (mean inter-item .50) and .84 for the post-intervention survey (mean inter-item .53).

The sixth factor, 'improving learning through quality teacher feedback', focused on the elements of good/ bad feedback and how they contributed or hindered the students' learning. There were six items for this factor. The alpha was .70 for the pre-intervention survey (mean inter-item .28) and .56 for the post-intervention survey (mean inter-item .18). One item, 'the feedback I receive from my Social Studies

teacher used language that only my teacher can understand', was dropped to improve the internal consistency. By removing this item, the alpha increased to .72 for the pre-intervention survey (mean inter-item .34) and was .53 for the post-intervention survey (mean inter-item .20).

The final factor, 'timing of feedback for effective learning', focused on the timing of when the feedback was given to the students and how this might affect learning outcomes. All six items for this factor were kept as the alpha was .73 for the pre-intervention survey (mean inter-item .31) and .67 for the post-intervention survey (mean inter-item .26).

Once the factors and items were finalised, the next step was to conduct a two-way repeated measure of analysis of variance (ANOVA) to determine whether there were any statistically significant interactions between class, gender and the pre- and post-intervention phases with the seven factors, which were the dependent variables. Before a two-way repeated measure ANOVA was undertaken, the data were tested for distribution for normality to ensure that the distribution curve was normal. The Kolmogorov-Smirnov test confirmed that the data were normally distributed. A two-way repeated measure ANOVA to analyse the pre- and post-intervention survey results was conducted, instead of using a non-parametric test such as the Wilcoxon Signed-Rank test. A relatively conservative alpha of $< .01$ was set for significance testing.

9.4.2 GCE O' level results and peer feedback participation and peer feedback performance

The first data from the GCE O' level results involved analysing the 2012 GCE O' level Combined Humanities grades, in relation to the student's peer feedback participation ratings and marks from the two peer feedback assignments. A Pearson correlation coefficient was performed using SPSS 20 to determine whether the GCE O' level Combined Humanities results were related to the students' participation in the peer feedback activity or the students' marks for their peer feedback assignments, followed by a hierarchical multiple regression to predict any relationship between peer feedback participation and peer feedback assignment scores. A second hierarchical multiple regression was also conducted using the student participants' Common Test scores (before and after the implementation of AfL strategies),

reflection scores, peer feedback participation ratings and peer feedback assignment scores.

The next step taken in the analysis was to determine how well students who scored distinction grades participated during the peer feedback activities, and how well they scored for the peer feedback assignment (see Table 9). Hence, these data focused on those students who scored distinction grades (A1 and A2), a borderline pass (C6) or fail grades (D7, E8 or F9) (refer to Appendix M for the full list of all students GCE O' level results, peer feedback rating scores, peer feedback essay performance scores, Common Test scores and reflection scores).

Table 9 Students Categorised Based on GCE O' Level Grades, Participation Rating and Essay Scores

GCE O' level grade	Ratings for participation	Marks given for peer feedback essays
A1/A2	Good/Excellent	55 marks and above
A1/A2	Good/Excellent	54 marks and below
C6/D7	Fair/Average	55 marks and above
C6/D7	Fair/Average	54 marks and below

9.4.3 2010-2012 GCE O' level results

The second part of the data analysis using the GCE O' level results involved examining the GCE O' level results from 2010 to 2012 for the subject Combined Humanities. This analysis focused on:

1. Comparing the school percentage passes and national percentage passes of the 2010 to 2012 Combined Humanities cohorts;
2. Comparing the school percentage distinctions and the national percentage distinctions of the 2010 to 2012 Combined Humanities cohorts; and
3. Comparing the mean subject grade (MSG) of the 2009 to 2012 Combined Humanities cohorts.

This analysis of the 2010 to 2012 GCE O' level Combined Humanities results may provide a way of investigating whether the students who used AfL strategies such as peer feedback, self-regulated learning through goal setting, and reflective writing, and who understood the performance standards, might have received better marks in the GCE O' level Combined Humanities results as compared to the previous cohorts who were taught using only teacher-centred instruction.

9.5 Concluding remarks

In the present study, even though the quantitative and qualitative strands were analysed independently, each strand provided "an understanding of the phenomenon under investigation [which were] linked, combined, or integrated into meta-inferences" (Teddlie & Tashakkori, 2009, p. 266). In answering the research question, emphasis was placed, in the first instance, on the qualitative data.

9.6 Summary of research methods

This chapter has outlined the purpose of the research, a justification for the paradigm and the methodological approach used, and the rationale for using the mixed methods design and case study approach. In addition, the issue of the present study being considered as having some of the qualities of insider research was explained. In the second section of this chapter, the research method was presented. The context of the study, the rationale for recruiting the participants and the recruitment process were described followed by an account of the precautionary measures taken by the researcher to limit bias. A detailed explanation of the stages of the research inquiry, the data collection tools and the data sources were also highlighted. In addition, the chapter outlined the qualitative and the quantitative analysis together with some preliminary analyses. The ethical considerations for the research design and the validity issues were also addressed.

Chapter 10 Research Findings
Phase One Teachers' & Students' Perception of Existing Teaching & Learning Practice

10.1 Scope of the chapter

This chapter presents the research findings from the pre-intervention surveys, interviews, focus group discussions and students' reflective writing about the peer feedback process, as described in Chapter 5 of the research design.. Phase One examines the existing assessment and feedback beliefs and practices at Fairmont Secondary School (Fairmont).

10.2 Phase One: Teachers' and students' perceptions of existing teaching and learning practice

This section seeks to describe the teachers' and students' initial perceptions of their teaching and learning practices before the implementation of AfL strategies, and their perceptions of using AfL strategies to improve teaching and learning. The pre-intervention survey results were used as a guide to understand the teachers' and students' perceptions of AfL strategies, such as peer feedback, self-regulated learning and quality written feedback, as well as its benefits and challenges. The information gathered in this section was extracted from the Phase One interviews, focus group discussions, lesson observations and the pre-intervention survey results. Pseudonyms are used to identify the teacher and student participants. For the student participants, the class from which they originated is given in brackets, for example Natasha (3Y) is from class 3Y.

10.2.1 Existing teaching and learning practice

Before the AfL strategies could be implemented and possibly sustained over time, it was important to understand the existing teaching and learning practices. This would assist the researcher to plan a realistic intervention programme to prepare the teachers and the students for using AfL strategies in the classroom.

Across all the classroom observations that the researcher conducted, it was quite clear that the Secondary Three Social Studies lessons subscribed to the traditional instruction-assessment model (Ainsworth & Viegut, 2006). In this model (see Figure

13), teacher-talk was used as the main pedagogical tool to disseminate content from a chapter to the students, which was followed by a summative test. Grades from this summative test summarised the students' learning achievements and served to promote the students to the next grade level. The teacher then moved on to the next chapter and repeated the same procedure. The test results were used to record the students' achievements and were rarely used by the teachers as a feed forward mechanism to improve their teaching instruction.
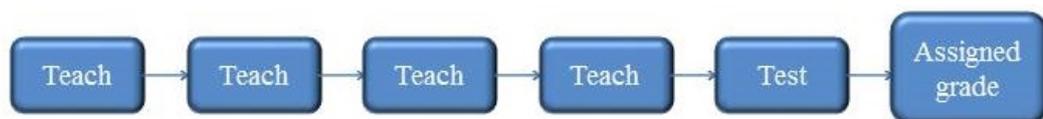
Figure 13. The instruction-assessment model used for Social Studies lessons at Fairmont.

The following paragraphs describe a typical Social Studies lesson at Fairmont. These descriptions were gathered from the teachers' interviews, students' focus group discussions and the 39 lesson observations made during Phase One. For each lesson observation, the researcher would focus on whether the teachers informed the students about the teaching objectives, and pre-assessed the students' knowledge of the chapter. As well, observations were noted on the type of teaching pedagogy used and how the teachers and students monitored the learning.

The teacher participants started the lesson by introducing the chapter to the students, followed by a PowerPoint presentation where content from the textbook was presented to the students. There was no pre-assessment conducted to determine the students' current knowledge. Xena, the 3X Social Studies teacher, said that it was not necessary and a waste of time to assess the students' current knowledge. In addition, the teacher participants did not inform the students about the teaching objectives of the lesson. There were very few weekly assignments given to the students to inform the teachers or the students about their current competency levels and their learning progress.

Although all the teacher participants acknowledged during the interview sessions that it was important to facilitate learning, the didactic teaching style was predominantly used for classroom instruction. The use of PowerPoint slides was the preferred mode of content delivery because, for beginning teachers such as Wanda

(3Y Social Studies teacher), the slides helped her to remember the content that needed to be disseminated. Drill and practice were used to prepare students before they sat for any summative tests, thus helping to ensure that the students would perform well.

When asked about the teachers' role, all the student participants acknowledged that the teachers' role was limited to content dissemination. The students felt that teaching and learning should not be restricted to listening to the teacher's lecture and *"fill[ing] in the worksheet and copy, copy, copy"* (Julius, 3W) but *"understanding concepts"* (Felix, 3S) and to be guided by *"timely feedback"* (Nelly, 3X) from the teachers. All the student participants from the focus groups thought that the worksheets and the PowerPoint slides were replicated from the textbook. Rahman (3S) said that he would prefer Suzie, the 3S Social Studies teacher to avoid giving lectures. When the teachers were asked to describe their teaching roles, they all said that they should facilitate learning but were unable to do so because they believed their students to be *"lazy ... and not independent learners"* (Suzie). As a result, the teacher participants said that their teaching was *"basically, I do the content, you listen ..."* (Xena).

Yuna (3Y) preferred Yasmin (3Y Social Studies teacher) not only to identify the mistakes she had made but also to explain her mistakes to her and to offer suggestions for ways to improve her essays. She also felt that it was Yasmin's duty to help the students to do well in tests and examinations. This view was also shared by Yali (3X) who said that the role of Xena, his Social Studies teacher, was to inform the students what to learn so that they could *"score for the test"*. Hence, the teacher participants had a tendency to *"spoon feed"* (Xena) the students with notes and model answers that were memorised and produced during tests, so as to fulfil the students' expectations of the teacher. This practice of 'spoon feeding' and *"teaching to the test"* (Suzie) gave both teachers and students a sense of security, particularly while preparing for the GCE O' level examination, as they felt that maximum effort had been invested in this test to achieve good academic results.

From the 39 lesson observations, there was little evidence of the teacher participants assessing the students' learning or helping the students to self-regulate their learning. Suzie confessed that *"checking for understanding is my weakest point.*

I am still struggling how to check for students' learning". According to Wanda and Suzie, if attempts were made to assess the students' on-going learning, it was limited to asking questions where the students could answer in chorus with a 'yes' or 'no', which failed to inform the teacher of individual students' learning progress.

In addition, the students had only a limited idea about what or how to self-regulate their learning. As well, the teacher participants did not regularly inform the students of the lesson's teaching objectives. The student participants from the focus groups said that none of them were aware of the aims and outcomes of the lessons, which made evaluating their own learning a challenge. The following excerpt from Yasmin's interview illustrates how her teaching style could potentially be a barrier to self-regulated learning: *"I am not the kind that subscribes to writing the objectives on the board ... I don't have a fixed structure. If I remember something interesting, I will interject into the lesson"*.

When the students from the focus groups were asked about who they believed was responsible for ensuring that learning took place, approximately half of the student participants said that it was the teacher's responsibility. Meanwhile, a few student participants said that both the teacher and the students were responsible for effective learning because the *"teacher and students are like complementary goods, we need one another to work together"* (Ynes, 3Y). According to Mika (3S), learning would not be effective even if the students had the best teacher, unless the students put in the effort to learn. Hence, for AfL strategies, particularly self-regulated learning, to work well, the teacher participants must be convinced that the students are responsible for their own learning. As for the students, they should be prepared to shoulder more responsibility for their learning.

10.2.2 Defining a successful learner

In the Singapore educational culture, achieving high marks has been seen as the main indicator for gauging students' academic success (Freya, 3S). Hayden (3Y) and Alex (3Y) both stated that obtaining high marks in tests and examinations would increase one's motivation, morale and pride. In addition, Fern (3S) said *"if you don't do well, there's no future"*. This belief has been deeply inculcated into the thinking of all students at the start of their educational path by parents who expect their child to perform well academically (Nelly, 3X). Sage (3X) said that obtaining high marks

was critical since it was synonymous with successful learning. Yan (3S) shared how his parents looked at his marks and not how much he had learnt as an indicator of his learning success: *"... my parents will say you must pass, don't understand content never mind"*.

When the students were probed further about the definition of a successful learner, they highlighted the following features: able to *"reach your target"* (Nelly, 3X); *"good memory power"* (Darian, 3Y); *"always get high marks"* (Amy, 3W); *"listen in class"* (Brent, 3X); and *"keep on taking notes"* (Natasha, 3Y). These features described the outcomes of assessment of learning practices where students are generally passive rote learners, memorising information and regurgitating it during tests and examinations to gain high marks (Levi, 3X). The product of learning in assessment of learning practice is mainly marks, which are used as a measure of the students' learning success. However, marks from tests are a poor mechanism to help students evaluate and identify their learning problems during the learning process. Yasmin suggested that both parents and the school must redefine 'success' in learning, because if AfL strategies are to be used, there would be an absence of an *"objective mark"*. Hence, according to Yasmin, the school, parents, teachers and students should be 're-educated' to understand that AfL practices are focused on the learning process, which is far more informative as an indicator of learning than are marks.

10.2.3 Misconceptions about AfL

Before the AfL strategies were implemented in the Social Studies lessons, it was important to assess the teacher participants' knowledge about the aims and functions of AfL strategies. During the Phase One interviews, Suzie and Wanda understood that AfL strategies functioned to assess students' learning progress. Both Wanda and Suzie explained that AfL strategies were *"small tasks that showed the [students] have grasped certain concepts"* (Wanda) or *"you assess students' work, their responses in class, in group discussions"* (Suzie). According to Wanda, if the students failed to understand the concepts, she would step in to help her students to close their learning gaps by changing her classroom instruction which was one of the purposes of AfL practice.

In contrast, Xena described AfL strategies as *"an alternative form of assessment other than pen and paper"*. Yasmin cited using *"drawing and talking"* as examples of AfL strategies and equated AfL practice with *"ambiguous learning"*. Both Xena and Yasmin likened the use of different assessment methods to that of using AfL strategies in lessons. Neither of them mentioned how these assessment methods could be used to evaluate the learning progress of their students or to suggest actions they could take to assist the students to improve their learning, which are the main functions of AfL practice. Xena and Yasmin's descriptions of AfL showed the need to address the misconceptions that they had about AfL practice in Phase Two of the research, so that the teacher participants could utilise the potential of AfL practices to improve their students' learning experience.

Xena and Yasmin's lack of knowledge and experience about AfL strategies also influenced their attitudes about the use of these strategies in the classroom. They doubted the effectiveness of AfL strategies in improving students' learning. The teacher participants were also concerned about whether AfL strategies could produce good GCE O' level Combined Humanities results because, in Singapore, the teaching and learning culture is so heavily focused on examination results to gauge the success of both teachers and students in teaching and learning. *"I need real examples of success"* was what Suzie said to convince her to use AfL strategies in her classroom. She felt that even though the Humanities Head of Department (HHOD) allowed the teachers to explore other teaching pedagogies, the repercussions of not producing results were enough to deter her from trying AfL strategies. This stress on producing results in high-stake national examinations was voiced by the HHOD during the Phase One interview:

> *"Whatever you want to do, you must produce results and that is number one, must produce results ... because we are held accountable ... at the end of the day, the boss [Principal] is going to ask, you are the teacher of this class, why this class did like that?"*

Thus, there were few incentives to use AfL strategies because of the uncertainty of these strategies in producing good academic results. Besides, the current practice of assessment of learning had worked well for the teachers and the school in producing above national percentage passes in the GCE O' level Combined Humanities since 2005.

10.2.4 Teachers' and students' capacity and readiness

In Phase One, the researcher learnt more about the teachers' and students' readiness for, and comfort levels about, using AfL strategies. The information gathered was used to plan for the learning workshops and to address any concerns that the teacher and student participants might have.

In general, the teacher participants doubted their ability and capacity to use AfL strategies. Yasmin said that *"it will be difficult for me to do it, because I have to change my mentality which is the most difficult thing to change"*. Suzie said she wanted to use AfL strategies but *"I think honestly I am half-hearted ... I thought exam is coming and that's it, actually it's myself"*. This was possibly because the teacher participants had not been fully exposed to AfL practices during their pre-service teacher-training course (Dr. Beh, NIE lecturer). Dr. Beh, a lecturer from the National Institute of Education said that the pre-service course *"focuses on getting teachers on board in terms of the assessment system ... how to set exams, how to mark exams"*. Dr. Ling another lecturer from the National Institute of Education said *"we try our best to build assessment for diagnostic purposes",* but due to the lack of time and other demands, it was difficult to have a module specifically about AfL practice in the pre-service teacher-training course. Thus, this limited exposure of the teacher participants to AfL practice could partly explain why they seemed to be unwilling to use the pedagogy in their classrooms.

Even the HHOD questioned her staff's capacity to use AfL strategies in their lessons. She said that the teachers *"are not willing"* to use AfL strategies because they perceived teacher-talk instruction to be the most effective pedagogy to help the students learn. The HHOD also felt that to expect the same change in belief from the students would be unfair for the students as well, because they were accustomed to lecture-style teaching methods. This sentiment was shared by Yasmin as she confessed that if it was difficult for her to change her teaching style from teacher-centred teaching to student-centred learning, what more could she expect from her students to change from passive to active learners.

Xena also questioned her students' ability, especially the lower-ability students, to take responsibility and ownership for their own learning, which is an important aspect of AfL. She shared how her students failed to complete the simple task of

reading a chapter and doubted whether they could monitor their own learning progress, which was a far more complex task. She noted that students must know their role as learners if AfL activities were to be implemented. Yasmin also doubted whether her higher-ability students could take charge of their own learning. She felt that her students would not be open to the use of AfL strategies because their definition of 'teaching' was to see the teacher standing in front of the classroom and delivering content while they sat and listened quietly. Some students like Hera (3W) saw taking charge of her own learning as a 'new' concept because *"the teacher should make sure that everyone understands at the end of the lesson"*.

Yasmin believed that if AfL strategies were to be used in the classroom, the school would have to support the teachers by providing adequate training and AfL teaching materials because the teachers would not have the time and capacity to create AfL lessons or teaching materials. In addition, the teacher participants felt that the school must empower them to teach based on the students' learning progress and not be restricted by the Scheme of Work, which dictates what the four teachers should teach within the year. For example, the Scheme of Work covered the planned types of class activities, assessment strategies and the duration needed to complete the syllabus, including set tests and examinations. Any use of AfL strategies had to be undertaken within the context of the Scheme of Work. Suzie felt that due to the Scheme of Work, she rarely took into account whether her students had mastered the topic. She would just *"bulldoze through"* to the next topic. However, Suzie felt that AfL practice would be a better pedagogy to help her students to learn effectively.

10.2.5 Perceptions of peer feedback

10.2.5.1 Pre-intervention survey results: Students' perceptions of peer feedback

In Phase One, before the focus group discussions were conducted, the pre-intervention survey results were analysed. A one-way analysis of variance (ANOVA) was performed on the seven factor scores from the Phase One pre-intervention survey results (see Chapter 9, sub-section 4.1):

1. To examine the mean scores in terms of existing attitudes and beliefs; and
2. To determine whether there were any significant differences between the means of the four Social Studies classes.

This analysis was conducted to test the researcher's assumptions that:

1. Lower-ability students (classes 3S and 3X) might be more receptive towards peer feedback than higher-ability students (classes 3W and 3Y);
2. Higher-ability students (classes 3W and 3Y) might be more self-regulated than lower-ability students (classes 3S and 3X); and
3. Higher-ability students (classes 3W and 3Y) might be more active in using the teacher's written feedback as feed forward as compared to lower-ability students (classes 3S and 3X).

The means and standard deviations for the factor 'positive outcomes of giving and receiving peer feedback' are provided in Table 10. They are presented for each class and for the total sample. It can be seen that the overall mean was 3.57 (SD = .45). On the five-point scale, this is between 'neutral' and 'agree' for items asking about 'positive outcomes of giving and receiving peer feedback'. It is apparent from the means that each of the classes also had a mean score between 'neutral' and 'agree'. To compare the classes on this factor, a one-way ANOVA was conducted with a significance level of 1%. This alpha level increased the confidence that any significant result found was not due to chance (Cohen, 1988; Fisher, 1992). The data are normally distributed for all the seven factors as assessed by the histograms and Kolmogorov-Smirnov test ($p < .01$) (see Chapter 9, sub-section 4.1). The assumption of sphericity was not violated, as the epsilon of 1 ($\varepsilon = 1$) indicated that the condition of sphericity was exactly met.

Table 10 Means and Standard Deviations for the Factor Positive Outcomes of Giving and Receiving Peer Feedback

Classes	N	Mean	Std. Deviation	Std. Error	99% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3S	42	3.61	0.42	0.07	3.48	3.74	2.53	4.40
3X	41	3.45	0.40	0.06	3.33	3.58	2.60	4.07
3W	36	3.66	0.52	0.09	3.49	3.84	2.20	5.00
3Y	38	3.55	0.46	0.07	3.40	3.70	2.00	4.60
Total	157	3.57	.45	.04	3.50	3.64	2.00	5.00

Before the data were analysed using a one-way ANOVA, the pre-intervention survey results were tested for homogeneity of variances. The assumption of homogeneity of variances was violated for the factor 'positive outcomes of giving and receiving peer feedback', as assessed by Levene's test of homogeneity of variance ($p > .01$) (see Table 11).

Table 11 Levene's Test of Homogeneity of Variances for the Factor Positive Outcomes of Giving and Receiving Peer Feedback

Levene Statistic	df1	df2	Sig.
.61	3	153	.61

Since, the Levene's test showed that the homogeneity of variance was violated, the Welch robust tests of equality of means were used (De Beuckelaer, 1996; Welch, 1938, 1947). Table 12 shows the results of the Welch test of equality for the factor 'positive outcomes of giving and receiving peer feedback'. There were no statistically significant differences for the factor 'positive outcomes of giving and receiving peer feedback' among the classes, $F(3,1.66) = 83.35, p > .01$.

Table 12 Welch's Robust Tests of Equality of Means for the Factor Positive Outcomes of Giving and Receiving Peer Feedback

	Statistic[a]	df1	df2	Sig.
Welch	1.66	3	83.35	.18

The means and standard deviations for the factor 'negative outcomes of giving and receiving peer feedback' are provided in Table 13. It can be seen that the overall mean was 2.85 (*SD* =.59). On the five-point scale, this is between 'disagree' and 'neutral' for items asking about 'negative outcomes of giving and receiving peer feedback'. It is apparent from the means that each of the classes also had a mean score between 'disagree' and 'neutral' with the exception of class 3X (*M* = 3.05, *SD* = .49) with a mean score between 'neutral' and 'agree'.

Table 13 Means and Standard Deviations for the Factor Negative Outcomes of Giving and Receiving Peer Feedback

Classes	N	Mean	Std. Deviation	Std. Error	99% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3S	42	2.90	0.66	0.10	2.70	3.11	1.70	4.30
3X	41	3.05	0.49	0.08	2.90	3.21	2.10	4.20
3W	36	2.66	0.56	0.09	2.47	2.85	1.60	3.70
3Y	38	2.76	0.59	0.10	2.57	2.96	1.40	4.40
Total	157	2.85	0.59	0.05	2.76	2.95	1.40	4.40

For the factor 'negative outcomes of giving and receiving peer feedback', the assumption of homogeneity of variances was violated, as assessed by Levene's test of homogeneity of variance ($p > .01$) (see Table 14).

Table 14 Levene's Test of Homogeneity of Variances for the Factor Negative Outcomes of Giving and Receiving Peer Feedback

Levene Statistic	df1	df2	Sig.
1.58	3	153	.20

Since, the Levene's test showed that the homogeneity of variance was violated, the Welch robust tests of equality of means were used. Table 15 shows the results of the Welch test of equality for the factor 'negative outcomes of giving and receiving peer feedback'. There were no statistically significant differences for the factor 'negative outcomes of giving and receiving peer feedback' among the different classes, $F(3,3.97) = 84.10$, $p > .01$.

Table 15 Welch's Robust Tests of Equality of Means for Factor Negative Outcomes of Giving and Receiving Peer Feedback

	Statistic[a]	df1	df2	Sig.
Welch	3.97	3	84.10	.01

The possible interpretations of these results are elaborated in the following sections, where the student participants highlighted issues such as accuracy of peer feedback, group members' compatibility, and the credibility of students to give feedback, to be the main challenges of using peer feedback.

10.2.5.2 Accuracy of peer feedback

From the pre-intervention survey results, the researcher decided to ask the students and teachers during the focus group discussions and interviews about the challenges, as well as the positives and negatives of giving and receiving peer feedback for a more precise reflection of their understanding about peer feedback.

When the teacher participants were asked about the use of peer feedback in the Social Studies lessons, Wanda said that peer feedback was *"something not looked into"* by teachers because of the issue of accuracy of the given feedback. All the teacher participants were afraid that the students might give feedback that was disingenuous, which would hamper learning. Yasmin said her 3Y students were *"not mature enough"* and would take peer feedback *"personally"*. Also, Suzie said her 3S students were *"not interested in offering their feedback"* and that this would affect the accuracy of the given feedback.

Nelly's (3X) focus group voiced their concern that there would be students who might have a hidden agenda and would intentionally give inaccurate feedback to their peers. She feared that she would end up *"learning the wrong thing"*. Amy (3W), Levi (3X), Yali (3X), Sage (3X), Brent (3X), Yan (3S), Nea (3S), Darwin (3Y) and Drew (3Y) also made the same comment during their focus group sessions. It seemed that all the students from the focus groups, regardless of whether they were from 3S/3X (lower-ability) or 3W/3Y (higher-ability), were not receptive towards peer feedback. According to Xena, on occasions, the students might misunderstand certain concepts and provide inappropriate feedback. Hence, to confirm the validity of the feedback, she felt that the students would constantly seek assurance from the teacher and finally insist that the teacher should mark and give feedback instead of the students. For Xena, *"to save their (students) headache and save my headache, I will do it (the marking)"* because, in the first place, she could not trust the validity of the feedback given by her 3X students.

10.2.5.3 Lack of time

All the teacher participants felt that peer feedback would take too much time out of the curriculum, because during the peer discussions, students needed to deliberate on their feedback due to the subjective nature of the Social Studies essays. Yasmin said it would be easier and faster if the teacher marked the essays and used the curriculum time to deliver content and complete the syllabus.

Xena said that the Social Studies teachers *"cannot afford the time to do [peer feedback activity]"* because they must teach content and skills on top of fulfilling the summative assessment quota. For Xena, *"the easiest way out is just, I talk, you listen"*, which solved the problem of completing the syllabus within the stipulated time. Both Wanda and Suzie also believed that using peer feedback in class would slow them down and prevent them from keeping pace with the teaching and learning schedule stipulated by the Scheme of Work. If this happened, the test schedule would be affected because all the tests were standardised and given out in the same week to every class. Hence, it was pertinent that all the teachers must be on the same teaching pace so that the topics to be tested could be taught before the test date. Suzie revealed that because the teachers needed to conform to the schedule stipulated in the Scheme of Work, their teaching became rigid as they *"never check for understanding ... we just go on and on and on ..."* ignoring the students' learning difficulties. Thus, the

lack of time and the importance of completing the syllabus appeared to be barriers to the use of peer feedback in Social Studies lessons.

10.2.5.4 Group members compatibility

The teacher participants raised the issue of how best to group the students for the peer feedback activity. Xena believed that grouping students based on their ability could be a sensitive issue. She was concerned that grouping lower-ability students with higher- or average-ability students would be intimidating for the lower-ability students because those with higher abilities would dominate the discussions. On the other hand, the higher-ability students might not take into account the views of the other group members since these students might question the credibility of the lower-ability students to give appropriate feedback.

This grouping issue was also highlighted by the 3X, 3W and 3Y focus groups. They argued that if they were grouped based on the same ability, no learning could take place as the group members would not be able to offer any help since they were intellectually at the same level. Meanwhile, if they were grouped based on different ability, they felt that the lower-ability students might be out of place and would feel intimidated by the presence of the higher-ability students. However, no students from 3S labelled their peers as lower-ability or higher-ability during their respective focus group discussions. Freya (3S) said *"it doesn't matter"* who was in her peer feedback groups as *"everyone must have interest to do peer feedback"* (Don, 3S) and have *"the heart to contribute"* (Zen, 3S) to learning. In this case, the 3S students were more receptive towards peer feedback compared to the 3X, 3W and 3Y focus group students.

10.2.5.5 Ability of students to give feedback

Suzie questioned the ability of the students to give reliable feedback, and labelled her students as *"lazy thinkers"* who do not see the value of the peer feedback process to improve their learning. Suzie said that her 3S students would perceive the process of giving peer feedback as tiring and unnecessary, especially *"going round and round on a certain point, which the teacher can give straight to them"*. Nelly (3X) was the only student from the focus groups that questioned the need to use peer feedback because the teacher-talk style of lesson was *"a fine system"* to help the students to learn. Don (3S), Freya (3S), Wade (3X) and Darian (3Y) were the four

student participants who voiced their concerns about how giving peer feedback might cause the students to talk about other matters instead of focusing on their learning. Only Wade (3X) reiterated the importance of having the *"right mindset of want[ing] to learn"* otherwise, according to Darwin (3Y), peer feedback would turn out to be a mockery with *"nonsense feedback"* being shared. All these students shared their concerns about the quality of peer feedback, if their peers failed to take the feedback session seriously.

10.2.5.6 The possibility of affecting friendships

A few students from the focus groups mentioned that they were apprehensive about giving feedback to their peers. These students were afraid that their feedback could affect their friendships with their peers. However, Yan (3S) and Winnie (3X) felt that since the critique provided in the feedback was based on facts and should not be detrimental to one's self-esteem, students should not be overly worried. Besides, the rationale of peer feedback was to learn from the critique (Felix, 3S) and, as long as it was conveyed and received in a respectful manner, friendships should not be affected (Kody, 3W). Hence, according to the student participants from all classes, as long as the feedback given by their peers was based on facts, they would be willing to use peer feedback as part of the teaching and learning process.

10.2.5.7 Teacher's feedback versus peers' feedback

Suzie believed that her students would be apprehensive about giving peer feedback because they regarded feedback as something to be given by the teacher – the all-knowledgeable authority in the class. There was a mixed reaction when the student participants from the Phase One focus group discussions were asked who they would approach first to seek feedback to improve their learning, in order to understand how receptive the students would be to peer feedback. Most of the students from the 3Y and 3W focus groups said that they would approach the teacher first, while a handful of the 3S and 3X student participants said that their peers would be their first option. Drew (3Y) said that the teachers' comments have always been *"accurate"*, while Darian (3Y) said that it was part of the teacher's professional duty to give feedback. In contrast, Levi (3X) said he would accept his peers' feedback to improve his learning because they were readily available when needed, unlike the teachers, who were busy after school hours.

Nea (3S) said that she would try peer feedback because it would be fun to listen to her peers' comments. She expressed how the articulation of her understanding of the concepts to her peers would help her to gauge the progress of her learning. Kaiden (3X) said that he could learn from the *"different perspectives"* offered by his peers to help his learning. For Nea, these different perspectives could be as good as the teacher's feedback as *"two heads are better than one"*. Meanwhile, Nelly (3X) saw the advantage of receiving peer feedback because her peers could identify mistakes that she often glossed over, just in time for her to make changes before submitting her essay to Xena for marking.

10.2.5.8 Willingness to use peer feedback

Despite the challenges that the teacher participants foresaw that they would face when using peer feedback, Xena felt that it would be a good learning experience for the 3X students to learn from their peers. She felt that the peer feedback process would help the students to organise their thoughts as they examined their peers' essays and simultaneously *"assess[ed] themselves to see whether they kn[e]w what ha[d] been happening"* during lessons. Xena believed that when she listened to the peer feedback discussions, she could evaluate her students' learning progress and take action to correct any misunderstandings in their learning. Yasmin further added that for peer feedback to be part of the teaching and learning culture, the teachers must be *"firm[ed] and held on them (peer feedback) to the end, whether they like it or not ... because you cannot see the results or benefit of anything without going to the end"*.

10.2.5.9 Concluding remarks

In summary, both the teacher and student participants had mixed views about the effectiveness of using peer feedback to improve teaching and learning. Concerns such as the quality of peer feedback, the need to complete the syllabus, and partnering compatibility, seemed to be given more prominence than the positive outcomes that peer feedback could offer. The pre-intervention survey results suggested that the students were favourable towards peer feedback, particularly the benefits that could be gained in learning. However, during the focus group discussions, the student participants raised concerns about how peer feedback might negatively affect their learning. Hence, a component of the learning workshops was

used to address the teacher and student participants' concerns. In regard to the researcher's assumption that the 3S/3X students would be more receptive towards peer feedback compared to the 3W/3Y students, the mixed reactions from the focus group discussions about the outcomes of peer feedback were too inconclusive to draw a conclusion about this assumption.

10.2.6 Perceptions of self-regulated learning

10.2.6.1 Pre-intervention survey results: Students' perceptions of self-regulated learning

It has been claimed/ argued/ shown that learning effectiveness is enhanced when the students take responsibility for their own learning and display more self-regulated learning characteristics (Baker, Chard, Ketterlin-Geller, Apichatabutra, & Doabler, 2009; Dignath, Buettner, & Langfeldt, 2008; Zimmerman & Schunk, 2013). There is evidence that this can be achieved through students setting learning goals and engaging in reflective writing. Before the students were asked about self-regulated learning, the pre-intervention survey results were analysed.

From the pre-intervention survey results, the means and standard deviations for the factor 'responsibility towards learning' are given in Table 16. It can be seen that the overall mean was 3.74 (SD = .41). On the five-point scale, this is between 'neutral' and 'agree' for items asking about 'responsibility towards learning'. It is apparent from the means that each of the classes also had a mean score between 'neutral' and 'agree'.

Table 16 Means and Standard Deviations for the Factor Students' Responsibility towards Learning

Classes	N	Mean	Std. Deviation	Std. Error	99% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3S	42	3.74	0.37	0.06	3.62	3.85	2.71	4.57
3X	41	3.57	0.41	0.06	3.45	3.70	2.43	4.57
3W	36	3.79	0.39	0.07	3.65	3.92	2.71	4.86
3Y	38	3.89	0.43	0.07	3.75	4.03	2.71	4.71
Total	157	3.74	0.41	0.03	3.68	3.81	2.43	4.86

For the factor 'students' responsibility towards learning', the assumption of homogeneity of variances was violated, as assessed by Levene's test of homogeneity of variance (p > .01) (see Table 17).

Table 17 Levene's Test of Homogeneity of Variances for the Factor Students' Responsibility towards Learning

Levene Statistic	df1	df2	Sig.
.32	3	153	.81

Since, the Levene's test showed that the homogeneity of variance was violated the Welch robust tests of equality of means were used, followed by the Games-Howell post-hoc test. Table 18 shows the results of the Welch test of equality for the factor 'students' responsibility towards learning'. There were no statistically significant differences for the third factor among the different classes, $F(3,3.84) = 84.07$, $p > .01$. However, the Games-Howell post-hoc test was still conducted because the significance level approached a significance of ($p < .01$).

Table 18 Welch's Robust Tests of Equality of Means for the Factor Students' Responsibility towards Learning

	Statistic[a]	df1	df2	Sig.
Welch	3.84	3	84.07	.01

The Games-Howell post-hoc test is one of the most robust methods for comparing all possible combinations of class differences when the assumption of homogeneity of variances is violated (Hilton & Armstrong, 2006; Kromrey & La Rocca, 1995; Seaman, Levin, & Serlin, 1991). This test provided both confidence intervals for the differences between group means and whether the differences were statistically significant. The follow-up comparisons using the Games-Howell post-hoc analysis showed that the mean for 3Y ($M = 3.89$, $SD = .43$) was greater than the mean for 3X ($M = 3.57$, $SD = .41$) (see Table 16) by (.31, 99% CI [.01, .62]) and was statistically significant ($p < .01$) (see Table 19).

Table 19 Games-Howell's Post-Hoc Test for the Factor Students' Responsibility towards Learning

					Multiple Comparisons	
(I) Class	(J) Class	Mean Difference (I-J)	Std. Error	Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
3S	3X	0.16	0.09	0.23	-0.11	0.44
	3W	-0.05	0.09	0.95	-0.33	0.23
	3Y	-0.15	0.09	0.36	-0.44	0.14
3X	3S	-0.16	0.09	0.23	-0.44	0.11
	3W	-0.21	0.09	0.11	-0.51	0.08
	3Y	-0.31[*]	0.09	0.01	-0.62	-0.01
3W	3S	0.05	0.09	0.95	-0.23	0.33
	3X	0.21	0.09	0.11	-0.08	0.51
	3Y	-0.10	0.10	0.72	-0.41	0.21
3Y	3S	0.15	0.09	0.36	-0.14	0.44
	3X	0.31[*]	0.09	0.01	0.01	0.62
	3W	0.10	0.10	0.72	-0.21	0.41

*. The mean difference is significant at the 0.01 level.

The means and standard deviations for the factor 'operating/ functioning as a self-regulated learner' are given in Table 20. It can be seen that the overall mean was 3.65 (SD = .41). On the five-point scale, this is between 'neutral' and 'agree' for items asking about 'operating/ functioning as a self-regulated learner'. It is apparent from the means that each of the classes also had a mean score between 'neutral' and 'agree'.

Table 20 Means and Standard Deviations for the Factor Operating Functioning as a Self-Regulated Learner

Classes	N	Mean	Std. Deviation	Std. Error	99% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3S	42	3.77	0.46	0.07	3.63	3.92	1.75	4.69
3X	41	3.48	0.37	0.06	3.36	3.60	2.75	4.31
3W	36	3.62	0.43	0.07	3.47	3.76	2.69	4.63
3Y	38	3.71	0.33	0.05	3.60	3.82	3.00	4.25
Total	157	3.65	0.41	0.03	3.58	3.71	1.75	4.69

For the factor 'operating/ functioning as a self-regulated learner', the assumption of homogeneity of variances was violated, as assessed by Levene's test of homogeneity of variance (p > .01) (see Table 21).

Table 21 Levene's Test of Homogeneity of Variances for the Factor Operating/ Functioning as a Self-Regulated Learner

Levene Statistic	df1	df2	Sig.
.39	3	153	.76

Since, the Levene's test showed that the homogeneity of variance was violated, the Welch robust tests of equality of means were used, followed by the Games-Howell post-hoc test. Table 22 shows the results of the Welch test of equality for the factor 'operating/ functioning as a self-regulated learner'. There were no statistically significant differences for the factor among the different classes, $F(3,4.34) = 84.02$, p < .01.

Table 22 Welch's Robust Tests of Equality of Means for the Factor Operating/ Functioning as a Self-Regulated Learner

	Statistic[a]	df1	df2	Sig.
Welch	4.34	3	84.02	.007

The follow-up comparisons using the Games-Howell post-hoc analysis showed that the mean for 3S (M = 3.77, SD = .46) was greater than the mean for 3X (M = 3.48, SD = .37) (see Table 20) by (.29, 99% CI [.00, .59]) and was statistically significant (p < .01) (see Table 23).

The possible interpretation of these results are elaborated upon in the following sections, where the student participants shared their thoughts on the relevance of self-regulating learning, the students' willingness to self-regulate their learning, and the students' perceptions of who should be responsible for regulating their learning.

Table 23 Games-Howell's Post-Hoc Test for the Factor Operating/ Functioning as a Self-Regulated Learner

		Multiple Comparisons				
(I) Class	(J) Class	Mean Difference (I-J)	Std. Error	Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
3S	3X	0.29[*]	0.09	0.01	0.00	0.59
	3W	0.16	0.10	0.41	-0.17	0.48
	3Y	0.06	0.09	0.90	-0.22	0.35
3X	3S	-0.29[*]	0.09	0.01	-0.59	0.00
	3W	-0.14	0.09	0.45	-0.43	0.16
	3Y	-0.23	0.08	0.02	-0.49	0.02
3W	3S	-0.16	0.10	0.41	-0.48	0.17
	3X	0.14	0.09	0.45	-0.16	0.43
	3Y	-0.10	0.09	0.71	-0.38	0.19
3Y	3S	-0.06	0.09	0.90	-0.35	0.22
	3X	0.23	0.08	0.02	-0.02	0.49
	3W	0.10	0.09	0.71	-0.19	0.38

*. The mean difference is significant at the 0.01 level.

10.2.6.2 School policy of using target setting

Setting of learning goals (that correspond with the teacher's teaching objectives) and evaluation of learning (through reflective writing) are key elements that need to be present for students to be self-regulated learners (Nicol & Macfarlane-Dick, 2006). In an interview with the HHOD, it was noted that Fairmont students do not set learning goals, instead they do target setting for all subjects. Target setting was a practice, where at the start of each year, the students would write down *"what they expect to score (grades to achieve)"* (Xena) for their mid- and end-of-year examinations. The students would then review these targets on a quarterly basis. Suzie said that the review process was often conducted for the sake of it without the students examining why they have failed to reach the target. As a result, according to Nicol, Macfarlane-Dick, (2006), Gibbs & Simpson (2004), target setting became an ineffective process for improving learning as the grades were too vague to help students identify and address specific learning difficulties.

Suzie said that, at times, she did mention the teaching objectives to her students but admitted that she *"didn't ensure that it (teaching objectives) gets to them"* or gave them time to assess what they have learnt. Wanda specified that she would not

ask her students to set learning goals or reflect on their learning, because *"they don't understand the subject yet. I will do that in Term Two"*. As a result of not informing the students of the teaching objectives, Natasha (3Y) said that she had no idea what the focus of the lesson was, which made evaluating her learning difficult. Natasha also indicated that Social Studies learning became a challenge because, at times, Yasmin was unclear of her own teaching objectives resulting in the lesson becoming disorganised and difficult to follow. According to Yasmin, it was not her teaching role to inform her students of the teaching objectives or to instruct them to reflect on their learning because they *"are not self-regulated ... they do not know what to learn, most definitely do not know how best they can learn it"*. For Ynes (3Y), the absence of the teaching objectives jeopardised her ability to be a self-regulated learner. She said that Yasmin must be clear about her own teaching goals, and inform the students of these goals so that they could understand the aims of the lesson, and eventually be able to gauge their learning progress based on these aims.

10.2.6.3 Students' knowledge of self-regulated learning

During the focus group discussions, the students were asked to describe their understanding of self-regulated learning. Students from the 3S focus groups were able to describe the essence of self-regulated learning better than the other focus groups. Freya (3S) defined self-regulated learning as *"keep[ing] track of what [they] have learnt"*. Meanwhile, Nea (3S) said that a self-regulated learner was one who knew *"where they have gone wrong ... and how to correct it"*.

When the focus group participants were asked whether they were self-regulated learners, the following students said that they were too *"lazy"* (Mike, 3S; Sage, 3X; Manuel, 3Y; Rahman, 3S; Freya, 3S), *"not interested"* (May, 3W), or *"do not have time"* (Natasha, 3Y; Nelly, 3X; Darwin, 3Y; Sage 3X; Winnie, 3X) to be such a learner. Natasha said that the only time she would self-regulate her learning progress was when she received her test papers and looked at the marks she obtained. She acknowledged that it would be too late to identify and rectify her learning problems, or to use the teacher's feedback as feed forward, since the tests' marks were finalised and used to compute the final Social Studies grade.

When asked about the potential of setting learning goals and evaluating learning through reflective writing, Darwin (3Y) said that doing so would be a *"waste of*

time". He would rather have the teacher *"just teach"* the class throughout the lesson. Students like Darwin, Sabina (3X), Kiev (3W) and Ynes (3Y) said that they do not need to write learning goals or reflect on their learning because they could monitor their learning by checking the accuracy of their understanding by referring to the Social Studies textbook, the self-help assessment books produced by private publishers, or from their private tutors. This was important evidence which showed that some students were displaying a number of features of self-regulated learning. However, when asked when they would check their understanding, most of the student participants said it would happen before a test.

10.2.6.4 Relevance of self-regulating learning

Darian (3Y) questioned why his Social Studies teacher would emphasise the use of self-regulated learning strategies, when his other subject teachers *"just teach"*. In addition, Natasha (3Y) highlighted the difficulties and relevance of setting learning goals because *"sometimes we are not sure what to set, we are not sure what we are supposed to do"*. Throughout the focus group discussions, the 3Y focus groups were more vocal and critical of the relevance of self-regulating their learning through the setting of learning goals and reflective writing than the other three classes. However, this evidence is not sufficient to conclude that the lower-ability students (3W/3Y) might be less self-regulating than the higher-ability students (3S/3X).

10.2.6.5 Guiding students to be self-regulated learners

The HHOD pointed out that for self-regulated learning to take place, the teachers must also assess the students' learning progress as stipulated by the teacher's weekly lesson plan. By doing so, the teacher can help the students to identify their learning problems and offer guidance to close any learning gaps. She admitted that teachers were often preoccupied with trying to cover their teaching objectives and, as a result, failed to assess whether the students had mastered the lesson's objectives that they had set.

Relative to these findings, the teacher participants were asked how they monitored their students' learning progress and what the different avenues were that they provided to encourage the students to self-regulate their learning. The teacher participants said that the test marks were the only way they monitored their students learning progress. In regard to encouraging the students to be self-regulated learners,

Xena said that all the teacher participants gave the students worksheets to help them to monitor their learning progress. However, Suzie felt that these worksheets were not useful for the students to evaluate their learning because they would fill in the blank spaces by copying from the teacher's PowerPoint slides, which was not an effective way to help the students to assess their learning.

Meanwhile, Nea (3S) suggested that to help students to be more self-regulated learners, the students must be taught how to be so, particularly learning how to set goals and reflect on their learning. She felt that students should be guided until they felt confident to set their own learning goals and reflect on their learning. All the students from the focus group discussions said that for a start, the teacher and the students should set the learning goals together.

10.2.6.6 Regulating learning: Teacher's or student's responsibility?

The students from the focus groups were asked who was responsible for the students' engagement in self-regulated learning. Natasha (3Y) said that the teachers could help the students to regulate their learning by reviewing each section of the chapter before moving on to the next section. This would help the students to identify their learning gaps early in the piece, and to seek help immediately to rectify their learning problems (Hayden, 3Y). Zen (3S) suggested that the teacher should prepare a checklist, where the students would give a tick to indicate the areas where they had problems. This checklist would be returned to the teacher for her to take action to modify her teaching. Zen saw that learning problems emerged due to the teacher not being able to teach well.

Interestingly, none of the student participants from the focus groups suggested how the students themselves could initiate what they could do to become more self-regulated learners. The students seemed to suggest that helping them to regulate their learning was exclusively the work of the teacher and not the students, particularly the 3X focus group students. Even though, these students acknowledged that they were partly responsible for their learning, Yali (3X) emphasised that Xena's *"job is to teach, so that we can learn in an easier way and score for the test'.* Brent (3X) said Xena should *"tell us what to study, what to learn,* while Winnie (3X) shared that the teacher's job is to *"give us the key points for exams"*.

From the focus group discussions, there is no real evidence that the higher-ability (3W/3Y) students may be more self-regulating than the lower-ability (3S/3X) students. In regard to the 3Y students being more proactive in their learning than the 3X students, there was no real evidence found to come to such a conclusion. However, throughout the focus group discussions, the researcher felt that the 3Y students were *"more competitive"* (Natasha, 3Y; Darian, 3Y; Darwin, 3Y) in doing well on their tests compared to the 3X students. As a result, the 3Y students seemed to be more hard-working to ensure that they would do well in their tests.

10.2.6.7 Willingness to self-regulate learning

Even though several student participants from the focus groups were sceptical about the process of self-regulating their learning, such as setting learning goals and reflecting on their learning, they said that they would try to do it. Casey (3W) saw the benefits of being a self-regulated learner because she would be able to focus on what to learn. Only Ben (3X) said that setting learning goals and evaluating his learning would make him more aware of his learning difficulties and help him to rectify them early, while Brent (3X), Winnie (3X) and Nelly (3X) said that it would be *"a waste of time"*.

Fern (3S) felt that setting learning goals would help her to stay focused because she would be clear about the learning directions at the beginning of the lesson. Mike (3S) indicated that setting learning goals for each lesson could increase his confidence level as he felt a sense of achievement each time he managed to meet his goals. He said he would be encouraged to continue to set more learning goals and hope this would improve his learning capacity. In terms of having the willingness to self-regulate their learning, the 3S students appeared to be more receptive and positive towards self-regulating their learning compared to the 3X students.

10.2.6.8 Concluding remarks

For self-regulated learning to be part of classroom instruction, the teachers must inform their students of the teaching/ learning objectives and then provide time for the students to evaluate their learning based on these goals (Gibbs, 2006; Pang & Leung, 2011). In addition, the students must see the relevance and importance of investing their time and effort into becoming self-regulated learners (Boekaerts,

1999; Embo, Driessen, Valcke, & Van der Vleuten, 2010; Zimmerman, 1989, 1990). For those students who were more inclined towards teacher-talk lessons, such as the 3X students, they seemed to be the least self-regulated or responsible towards their learning compared to the other classes. For the 3Y students who were perceived to be high achievers, the survey results showed that they were more responsible and self-regulated in their learning compared to the other classes, even though the focus group discussions did not seem to mirror such responses. From the results, it seems that the willingness of the teachers to guide the students to set learning goals and to take part in the reflective writing process could be important in helping move the students towards becoming more self-regulated learners.

10.2.7 Perceptions of written feedback

10.2.7.1 Pre-intervention survey results: Students' perceptions of teacher's written feedback

Many researchers claimed that the teacher's written feedback plays an essential role in improving student learning (Brown, Harris, & Harnett, 2012; Montgomery & Baker, 2007; Nicol, 2010). Before the student participants were asked about the importance of the teacher's written feedback to improve their learning, the pre-intervention survey results from Phase One were analysed to understand the students' perceptions of the usefulness of feedback to improve their learning and performance, the importance of the timing of the feedback, and how learning could be improved through quality teacher feedback.

The means and standard deviations for the factor 'improving learning through quality teacher feedback' are given in Table 24. It can be seen that the overall mean was 3.16 (SD = .61). On the five-point scale, this is between 'neutral' and 'agree' for items asking about 'improving learning through quality teacher feedback'. It is apparent from the means that each of the classes also had a mean score between 'neutral' and 'agree' except for class 3W with a mean score of 2.91 (SD = .73), which is between 'disagree' and 'neutral'.

Table 24 Means and Standard Deviations for the Factor Improving Learning through Quality Teacher Feedback

Classes	N	Mean	Std. Deviation	Std. Error	99% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3S	42	3.32	0.56	0.09	3.15	3.50	1.40	4.80
3X	41	3.17	0.55	0.09	3.00	3.34	1.40	4.00
3W	36	2.91	0.73	0.12	2.66	3.15	1.00	4.00
3Y	38	3.19	0.55	0.09	3.01	3.37	1.00	4.40
Total	157	3.16	0.61	0.05	3.06	3.25	1.00	4.80

The assumption of homogeneity of variances was violated for the factor 'improving learning through quality teacher feedback', as assessed by Levene's test of homogeneity of variance ($p > .01$) (see Table 25).

Table 25 Levene's Test of Homogeneity of Variances for the Factor Improving Learning through Quality Teacher Feedback

Levene Statistic	df1	df2	Sig.
2.85	3	153	.04

Since, the Levene's test showed that the homogeneity of variance was violated, the Welch robust tests of equality of means were used. Table 26 shows the results of the Welch test of equality for the factor 'improving learning through quality teacher feedback'. There were no statistically significant differences for the factor 'improving learning through quality teacher feedback' among the different classes, $F(3, 2.58) = 83.31, p > .01$.

Table 26 Welch's Robust Tests of Equality of Means for Improving Learning through Quality Teacher Feedback

	Statistic[a]	df1	df2	Sig.
Welch	2.58	3	83.31	.06

The means and standard deviations for the factor 'timing of feedback for effective feedback' are given in Table 27. They are presented for each class and for the total sample. It can be seen that the overall mean was 3.33 ($SD = .61$). On the five-point scale, this is between 'neutral' and 'agree' for items asking about 'timing of feedback for effective learning'. It is apparent from the means that each of the classes also had a mean score between 'neutral' and 'agree'.

Table 27 Means and Standard Deviations for Factor Improving Learning through Quality Teacher Feedback

Classes	N	Mean	Std. Deviation	Std. Error	99% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3S	42	3.42	0.62	0.10	3.23	3.62	2.00	4.67
3X	41	3.27	0.52	0.08	3.10	3.43	2.00	4.17
3W	36	3.11	0.77	0.13	2.85	3.37	1.00	4.00
3Y	38	3.49	0.44	0.07	3.35	3.64	2.50	4.17
Total	157	3.33	0.61	0.05	3.23	3.42	1.00	4.67

The assumption of homogeneity of variances was violated for the factor 'timing of feedback for effective learning', as assessed by Levene's test of homogeneity of variance ($p > .01$) (see Table 28).

Table 28 Levene's Test of Homogeneity of Variances for the Factor Timing of Feedback for Effective Learning

Levene Statistic	df1	df2	Sig.
1.79	3	153	.15

Since, the Levene's test showed that the homogeneity of variance was violated, the Welch robust tests of equality of means were used. Table 29 shows the results of the Welch test of equality for the factor 'timing of feedback for effective learning'. There were no statistically significant differences for the factor 'timing of feedback for effective learning' among the different classes, $F(3,2.95) = 82.84$, $p > .01$.

Table 29 Welch's Robust Tests of Equality of Means for the Factor Timing of Feedback for Effective Learning

	Statistic[a]	df1	df2	Sig.
Welch	2.95	3	82.84	.037

The means and standard deviations for the factor 'usefulness of feedback to improve learning and performance' are given in Table 30. It can be seen that the overall mean was 3.82 ($SD = .58$). On the five-point scale, this is between 'neutral' and 'agree' for items asking about the 'usefulness of feedback to improve learning and performance'. It is apparent from the means that each of the classes also had a mean score between 'neutral' and 'agree'.

Table 30 Means and Standard Deviations for the Factor Usefulness of Feedback to Improve Learning and Performance

Classes	N	Mean	Std. Deviation	Std. Error	99% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
3S	42	3.95	0.48	0.07	3.80	4.10	2.20	5.00
3X	41	3.51	0.63	0.10	3.31	3.71	1.00	4.40
3W	36	3.86	0.62	0.10	3.65	4.07	1.40	4.80
3Y	38	3.97	0.47	0.08	3.81	4.12	3.00	4.80
Total	157	3.82	0.58	0.05	3.73	3.91	1.00	5.00

For the factor 'usefulness of feedback to improve learning and performance', the assumption of homogeneity of variances was violated, as assessed by Levene's test of homogeneity of variance ($p > .01$) (see Table 31).

Table 31 Levene's Test of Homogeneity of Variances for the Factor Usefulness of Feedback to Improve Learning and Performance

Levene Statistic	df1	df2	Sig.
2.04	3	153	.11

Since, the Levene's test showed that the homogeneity of variance was violated, the Welch robust tests of equality of means were used, followed by the Games-Howell post-hoc tests. Table 32 shows the results of the Welch test of equality for the factor 'usefulness of feedback to improve learning and performance'. There were statistically significant differences for the factor among the different classes, $F(3,5.20) = 83.41$, $p < .01$.

Table 32 Welch's Robust Tests of Equality of Means for the Factor Usefulness of Feedback to Improve Learning and Performance

	Statistic[a]	df1	df2	Sig.
Welch	5.20	3	83.41	.002

The follow-up comparisons using the Games-Howell post-hoc analysis showed that the mean for 3S ($M = 3.95$, $SD = .48$) was greater than the mean for 3X ($M = 3.51$, $SD = .63$) (see Table 30) by (.44, 99% CI [.04, .83]), and was statistically significant ($p < .01$) (see Table 33). The mean for 3Y ($M = 3.97$, $SD = .47$) was also greater than the mean for 3X ($M = 3.51$, $SD = .63$) for the factor 'usefulness of feedback to improve learning and performance' by (.46, 99% CI [.55, .86]), and was statistically significant ($p < .01$).

Table 33 Games-Howell's Post-Hoc Test for the Factor Usefulness of Feedback to Improve Learning and Performance

					99% Confidence Interval	
(I) Class	(J) Class	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
3S	3X	0.44	0.12	0.00	0.04	0.83
	3W	0.09	0.13	0.89	-0.32	0.50
	3Y	-0.02	0.11	1.00	-0.36	0.32
3X	3S	-0.44*	0.12	0.00	-0.83	-0.04
	3W	-0.34	0.14	0.09	-0.80	0.12
	3Y	-0.46*	0.12	0.00	-0.86	-0.05
3W	3S	-0.09	0.13	0.89	-0.50	0.32
	3X	0.34	0.14	0.09	-0.12	0.80
	3Y	-0.11	0.13	0.82	-0.53	0.30
3Y	3S	0.02	0.11	1.00	-0.32	0.36
	3X	0.46*	0.12	0.00	0.05	0.86
	3W	0.11	0.13	0.82	-0.30	0.53

Multiple Comparisons heading spans the table.

*. The mean difference is significant at the 0.01 level.

In order to explain the pre-intervention survey results for these factors, the teacher participants' written comments on their class assignments in Phase One were analysed using a 'move analysis'. When Suzie's written feedback (see Figure 14) on her students' work was analysed, it showed detailed feedback that offered suggestions for how to improve the essay. For Yasmin's 3Y essay (see Figure 15) and Xena's 3X essay (see Figure 16), the comments comprised of 'ticks', marks and levels, which were not useful as feed forward because the students were not informed of the performance standards. There was no analysis conducted on 3W because there was no assignment given to the students in Phase One. This could explain why the 3S students found Suzie's written feedback to be useful to help them to improve their learning.

How does 'Reward for work, work for reward' lead to good governance?

As the principle suggests, the Government gives rewards and incentives as a form of encouragement to applaud citizens who have worked hard, to work even harder. Through incentives like the (Progress Package) which includes the recognition of the contributions of National Service men and helping lower-income households with living expenses, the Government emphasizes that hard work will bring about rewards. Thus, these subsidies and rewards will motivate and boost the people's spirit to excel even more. Also through this principle, the brightest and best of the country can be selected and be groomed to then contribute to the crucial sectors of the economy and government service. Overall, the people will support the Government for its efforts to encourage the people to do well for their own good. **Tick** The people will also see that the Government is very interested in grooming the citizens and will feel that the Government is unbiased as the bursaries, rewards are open to all citizens despite race, religion or status. **Tick** All these supporting factors will lead the citizens to strongly feel that the Governments is worth supporting. **Tick**

Areas for improvement **Suggesting improvement**

Progress Package : Who works hard here? **Calling attention to weakness**
Who gets rewarded ? **Juxtaposition Probing**
What is the impact of rewarding these ppl ?

⊘ : How come the brightest & best of the country can be selected & groomed ? **Probing Justaposition**

: A supported government leads to ? **Probing**

General impressions !

Good job !

Figure 14. A sample of a 3S essay marked by Suzie.

Figure 15. *A sample of a 3Y essay marked by Yasmin.*

Figure 16. A sample of a 3X essay marked by Xena.

10.2.7.2 Timely written feedback

For written feedback to be used as feed forward, Wanda said that it must be detailed, specific and constructive. The written feedback must also *"point out what is missing"* (Xena). In addition, the feedback must be *"timely"* (Suzie) to have a positive impact on students' learning and motivation. All the students from the focus groups highlighted the importance of timely feedback. According to Brent (3X), often the teacher's written feedback was irrelevant because it was given too late for the students to use as feed forward to prepare for an upcoming test. Nelly (3X) said that, at times, the written feedback was irrelevant because it could not be applied as the teacher had moved to a new topic.

For the 3W students, they had not received written feedback that they could use in their learning. In Phase One, the only written feedback that 3W received was from the tests, which was conducted after the pre-intervention survey was administered. As for the other classes, a possible factor that could have influenced the survey results – whether they received the written feedback early or late – did not have an

impact on their learning because the written feedback could not be used as feed forward.

10.2.7.3 Poor quality written feedback

The general consensus from the focus groups seemed to suggest a lack of written feedback given by the Social Studies teachers. Brent (3X) disclosed that Xena only wrote down the marks. Don (3S) revealed that the written feedback he received *"never tells [him] where [he] went wrong"* or offers any suggestions about how to improve. For May (3W), she was more interested in finding out *"what [she] can do to improve on"* her work and to avoid making the same mistakes. Fern (3S) described how she felt frustrated when Suzie's written feedback failed to explain *"why her work was not good enough, ok not good enough, I also know not good enough, that is why you didn't give me the marks, but why is it not good enough?"*

Based on the written feedback from the test papers, Julius (3W) and Kiev (3W) said that written feedback must be meaningful to help improve learning. Kiev felt that general feedback would not improve his learning and would cause more confusion, *"Ms Wanda says, this work needs more effort, which part needs more effort? What effort?"* Hence, it became apparent that teacher participants should be more aware of the importance of writing quality feedback, so that the students would find it useful to use as feed forward.

All the teacher participants acknowledged the importance of giving quality written feedback but they also said that it was a difficult task to give each student quality written feedback. The HHOD observed that the teacher participants' written feedback was limited to the symbols *"'ticks', 'question mark', the words 'explain', 'Level 1', 'Level 2', that kind of things, very seldom do they actually give them (students) feedback that is critical for their (student) development"*. The students also felt that the feedback given was *"too general"* (Brent, 3X) to be understood. Drew (3Y) said that, *"sometimes it (written feedback) is not clear, we don't really know what the teacher meant"*. As a result, the written feedback could not be used to help students close their competency gaps (Levi, 3X). The lack of quality written feedback could also demotivate the students from completing their assignments because the students may feel that even if they did the work, there would be nothing to gain,

"I do this particular piece of work, also no use, because when it comes back ... I also don't know what is wrong ... So, doing it (assignment) is equivalent to not doing it, because there wasn't any feedback given" (Xena).

Yasmin said that she gave *"stickers/ stamps"* as a form of feedback to the students and *"wrote 'see me' ... to do one-to-one explanation because I think no two persons are the same ..."*. For Wanda, she would write *"a short statement, 'you are progressing' which will serve as a source of encouragement"*. Yali (3X) found that writing a phrase such as 'good job' or giving stickers/ stamps was a reminder of his *"childhood days"*, which failed to indicate any weaknesses or strengths of his work. From the focus group discussions, it seemed that the poor quality of the written feedback made it difficult for all the students, regardless of whether they were from the higher-ability (3W/3Y) or lower-ability (3S/3X) classes, to use as feed forward.

10.2.7.4 Importance of marks as a substitute for writing feedback

After examining the students' assignments and test papers, the researcher noted that the teacher participants gave marks instead of writing feedback. As a result, the students had a tendency to look at the marks as a measure of their learning. Wanda felt that giving marks was a better way to *"see the students' progress"*. Xena said that the education system was limited to *"how well I (students) do, how many marks I (students) will get and pass"* instead of analysing the teacher's written feedback to help improve learning. As a result, the students were so accustomed to receiving marks that even when Xena wrote feedback that pointed out her students' mistakes without giving them marks, they would feel uncomfortable and would come back to her asking *"how many marks do I (students) get?"*

10.2.7.5 Usefulness of written feedback

During the focus group discussions, a handful of the student participants, particularly from classes 3X and 3W, indicated that they do not read their teachers' written feedback, while other student participants from the 3S and 3Y classes appreciated and valued the written feedback (as reflected in the pre-intervention survey results). Ynes (3Y) and Mika (3S) felt that the written feedback had helped them to reflect on their mistakes and to learn to avoid making the same mistake in future assignments and tests. Natasha (3Y) found that written feedback was a source of *"motivation to do well"* which could *"boost the morale"* of the students.

10.2.7.6 Reasons for the lack of written feedback

Despite the advantages that the students could gain from quality written feedback, the teacher participants and the HHOD explained the reasons for the lack of written feedback. The HHOD believed that the teacher participants' were inexperienced in giving quality feedback because they *"don't exactly know how to pinpoint or do not know how to provide feedback"*. In addition, the HHOD explained that the Social Studies teachers also teach English Language or History and providing written feedback for these subjects would normally take quite a lot of time to complete. Hence, to complete the marking on time, the Social Studies teachers would normally just give 'ticks' or write a short phrase at the end of the assignment.

The HHOD said that the class sizes also influenced the quality of the written feedback. At Fairmont, the average class size was 40 and *"teachers don't have the time or they don't have the energy"* to mark within the stipulated time each week. Xena admitted that she was *"struggling"* to finish all her marking and it was an *"impossible task"* to write feedback on each piece of student work. Wanda gave general feedback to her students because she felt that it would be unfair to give too much attention to one student's assignment and then neglect other students' assignments. Yasmin said that she felt *"it was too tiring to write for 42 scripts"*.

10.2.7.7 Concluding remarks

In summary, the teacher's written feedback was either not read, or not considered to be important, and was perceived as lacking in quality for the students to use as feed forward. Several factors, such as large class size and lack of time, were cited as reasons why written feedback was limited. The teachers' perceptions of the students' preference for marks instead of feedback showed the outcomes of an emphasis on the assessment of learning. The limited number of assignments also reduced the students' opportunities to learn from the written feedback, which could be one reason why the students were uncertain of the usefulness of written feedback to improve their learning.

Chapter 11 Research Findings: Phase Three Following the Implementation of AfL Strategies

11.1 Scope of the chapter

The following chapter focuses on the teacher and student participants' experiences and views after experiencing AfL strategies for eight weeks in Phase Three: the changes in the teachers' teaching and students' learning beliefs, attitudes and behaviours following the intervention and the possible improvements in learning associated with the intervention. The quantitative findings are presented in the first part of this chapter followed by the qualitative findings. The data for this chapter were extracted from the Phase Three interviews, focus group discussions, the pre- and post-intervention survey results and two entries about peer feedback taken from the reflection booklets. Both the positive and negative impacts of AfL strategies on teaching and learning practices are highlighted. An important change to note in Phase Three is that Suzie was replaced by Wanda to teach class 3S.

11.2 Pre- and post-intervention survey results: Changes in students' perceptions of AfL strategies

A two-way repeated measures analysis of variance was performed on the seven factors covering students' perceptions of teaching and learning to determine whether there were significant differences in the student participants' perceptions of teaching and learning practices after the intervention was conducted. The data were normally distributed for all seven factors, as assessed by the histograms and Kolmogorov-Smirnov test ($p < .01$). The assumption of sphericity was not violated, as the epsilon of 1 ($\varepsilon = 1$) indicated that the condition of sphericity was exactly met (see Chapter 9 sub-section 4.1). The Huynd-Feldt correction was used, as the estimated epsilon was greater than .75. The results showed that the intervention did not produce statistically significant interactions between phase and class, phase and gender, or phase, class and gender (see Table 34). However, there were statistically significant main effects for the phases (Phase One to Phase Three) for the following factors: 'positive outcomes of giving and receiving peer feedback'; 'usefulness of feedback to improve learning and performance'; 'operating/ functioning as a self-regulated learner'; and 'negative outcomes of giving and receiving peer feedback'. The means and standard

deviations according to class and gender for these factors are presented in Tables 35 to 38.

The intervention was associated with a statistically significant change for the factor 'positive outcomes of giving and receiving peer feedback', $F(1, 149) = 9.61$, $p < .01$, partial $\eta^2 = 0.06$ (see Table 34). Based on the partial eta squared of 0.06, using Cohen's (1988) guidelines, this would mean that the effect size was within the medium range. The students' perceptions of the factor 'positive outcomes of giving and receiving peer feedback' increased from the pre-intervention stage in Phase One ($M = 3.57$, $SD = .45$) to the post-intervention stage in Phase Three ($M = 3.76$, $SD = .54$) (see Table 35). (See Chapter 11 sub-sections 7.1, 7.2, 7.3, 7.4, 7.5) for reasons that may have contributed to the positive changes).

The implementation of AfL strategies also was associated with a statistically significant change for the factor 'usefulness of feedback to improve learning and performance' over time, $F(1, 149) = 15.17$, $p < .01$, partial $\eta^2 = 0.09$ (see Table 34). Based on the partial eta squared of 0.09, using Cohen's (1988) guidelines, this would mean that the effect size was within the medium range. There was an increase in the students' perceptions of the factor 'usefulness of feedback to improve learning and performance' from the Phase One pre-intervention stage ($M = 3.82$, $SD = .58$) to the Phase Three post-intervention stage ($M = 4.07$, $SD = .58$) (see Table 36) (see Chapter 11 sub-section 9.1 for possible reasons for change).

The intervention was also associated with a statistically significant change for the factor 'operating/ functioning as a self-regulated learner' over time, $F(1, 149) = 14.92$, $p < .01$, partial $\eta^2 = 0.90$ (see Table 34), with perceptions of 'operating/ functioning as a self-regulated learner' increasing from the Phase One pre-intervention stage ($M = 3.65$, $SD = .41$) to the Phase Three post-intervention stage ($M = 3.83$, $SD = .38$) (see Table 37). (See Chapter 11 sub-sections 8 (1, 2) for the possible reasons for the positive change). Based on the partial eta squared of 0.09, using Cohen's (1988) guidelines, this would mean that the effect size was within the medium range.

Finally, the implementation of the intervention was also associated with a statistically significant change for the factor 'negative outcomes of giving and receiving peer feedback' over time, $F(1, 149) = 6.78$, $p < .01$, partial $\eta^2 = 0.04$ (see

Table 34). Based on the partial eta squared of 0.04, using Cohen's (1988) guidelines, this would mean that the effect size was within the small range. The students' perceptions of the factor 'negative outcomes of giving and receiving peer feedback' decreased from the Phase One pre-intervention stage ($M = 2.85$, $SD = .59$) to the Phase Three post-intervention stage ($M = 2.66$, $SD = .65$) (see Table 38).

A possible reason that could contribute to these results might be an improvement in students' learning from the use of AfL strategies, which changed the students' perceptions of the effectiveness of using AfL strategies in teaching and learning practices. Other possible reasons are highlighted in the latter part of this section.

Table 34 Students' Perceptions of Teaching and Learning: Test of Within Subject Effects for Phase, Phase and Class, Phase and Gender, and Phase, Class and Gender

Source	Factor	Type III Sum of Squares	Ff	Mean Square	F	Sig.	Partial Eta Squared
Phase	F1 Positive outcomes of giving and receiving peer feedback	2.03	1	2.03	9.61	0.00	0.06
	F2 Usefulness of feedback to improve learning and performance	4.20	1	4.20	15.17	0.00	0.09
	F3 Operating/functioning as a self-regulated learner	2.34	1	2.34	14.92	0.00	0.09
	F4 Negative outcomes of giving and receiving peer feedback	2.52	1	2.52	6.78	0.01	0.04
	F5 Improving learning through quality teacher feedback	1.15	1	1.15	3.37	0.07	0.02
	F6 Timing of feedback for effective learning	1.96	1	1.96	5.40	0.02	0.04
	F7 Students' responsibility for learning	0.06	1	0.06	0.36	0.55	0.00
Phase*Class	F1 Positive outcomes of giving and receiving peer feedback	0.82	3	0.27	1.29	0.28	0.03
	F2 Usefulness of feedback to improve learning and performance	0.52	3	0.17	0.62	0.60	0.01
	F3 Operating/functioning as a self-regulated learner	1.17	3	0.39	2.49	0.06	0.05
	F4 Negative outcomes of giving and receiving peer feedback	2.41	3	0.80	2.16	0.10	0.04
	F5 Improving learning through quality teacher feedback	2.59	3	0.86	2.52	0.06	0.05
	F6 Timing of feedback for effective learning	0.66	3	0.22	0.61	0.61	0.01
	F7 Students' responsibility for learning	0.25	3	0.08	0.49	0.69	0.01
Phase*Gender	F1 Positive outcomes of giving and receiving peer feedback	0.51	1	0.51	2.40	0.12	0.02
	F2 Usefulness of feedback to improve learning and performance	0.50	1	0.50	1.81	0.18	0.01
	F3 Operating/functioning as a self-regulated learner	0.01	1	0.01	0.05	0.82	0.00
	F4 Negative outcomes of giving and receiving peer feedback	0.03	1	0.03	0.07	0.79	0.00
	F5 Improving learning through quality teacher feedback	.001	1	0.00	0.00	0.96	0.00
	F6 Timing of feedback for effective learning	.001	1	0.00	0.00	0.97	0.00
	F7 Students' responsibility for learning	0.01	1	0.01	0.03	0.87	0.00
Phase*Class* Gender	F1 Positive outcomes of giving and receiving peer feedback	1.02	3	0.34	1.60	0.19	0.03
	F2 Usefulness of feedback to improve learning and performance	1.68	3	0.56	2.02	0.11	0.04
	F3 Operating/functioning as a self-regulated learner	0.44	3	0.15	0.93	0.43	0.02
	F4 Negative outcomes of giving and receiving peer feedback	0.02	3	0.01	0.02	1.00	0.00
	F5 Improving learning through quality teacher feedback	2.07	3	0.69	2.02	0.11	0.04
	F6 Timing of feedback for effective learning	1.05	3	0.35	0.97	0.41	0.02
	F7 Students' responsibility for learning	0.73	3	0.24	1.43	0.24	0.03

	F1 Positive outcomes of giving and receiving peer feedback	31.49	149	.21
	F2 Usefulness of feedback to improve learning and performance	41.26	149	.28
Error	F3 Operating/functioning as a self-regulated learner	23.34	149	.16
	F4 Negative outcomes of giving and receiving peer feedback	55.41	149	.37
	F5 Improving learning through quality teacher feedback	50.96	149	.34
	F6 Timing of feedback for effective learning	53.98	149	.36
	F7 Students' responsibility for learning	25.24	149	.17

Table 35 Students' Perceptions of Teaching and Learning: Means, Standard Deviations for Phases One and Three for the Factor Positive Outcomes of Giving and Receiving Peer Feedback

	Class	Gender	Mean (Phase 1)	Mean (Phase 3)	Std. Deviation (Phase 1)	Std. Deviation (Phase 3)	N
Positive outcomes of giving and receiving peer feedback	3S	Female	3.69	3.90	0.33	0.43	27
		Male	3.46	3.39	0.54	0.73	15
		Total	3.61	3.72	0.42	0.60	42
	3X	Female	3.33	3.49	0.33	0.85	15
		Male	3.52	3.85	0.42	0.42	26
		Total	3.45	3.72	0.40	0.63	41
	3W	Female	3.58	3.88	0.48	0.33	21
		Male	3.77	3.59	0.56	0.68	15
		Total	3.66	3.76	0.52	0.52	36
	3Y	Female	3.57	3.92	0.40	0.40	26
		Male	3.50	3.76	0.58	0.32	12
		Total	3.55	3.87	0.46	0.38	38
	Total	Female	3.57	3.83	0.40	0.51	89
		Male	3.56	3.67	0.51	0.57	68
		Total	3.57	3.76	0.45	0.54	157

Table 36 Students' Perceptions of Teaching and Learning: Means, Standard Deviations for Phases One and Three for the Factor Usefulness of Feedback to Improve Learning and Performance

	Class	Gender	Mean (Phase 1)	Mean (Phase 3)	Std. Deviation (Phase 1)	Std. Deviation (Phase 3)	N
Usefulness of feedback to improve learning and performance	3S	Female	4.01	4.05	0.54	0.51	27
		Male	3.83	4.08	0.30	0.45	15
		Total	3.95	4.06	0.48	0.48	42
	3X	Female	3.65	3.72	0.40	1.04	15
		Male	3.43	4.11	0.73	0.42	26
		Total	3.51	3.97	0.63	0.72	41
	3W	Female	3.90	4.26	0.72	0.32	21
		Male	3.79	3.91	0.46	0.88	15
		Total	3.86	4.11	0.62	0.64	36
	3Y	Female	4.05	4.23	0.48	0.45	26
		Male	3.78	4.03	0.41	0.33	12
		Total	3.97	4.17	0.47	0.42	38
	Total	Female	3.94	4.10	0.56	0.61	89
		Male	3.66	4.04	0.57	0.54	68
		Total	3.82	4.07	0.58	0.58	157

Table 37 Students' Perceptions of Teaching and Learning: Means, Standard Deviations for Phases One and Three for the Factor Operating/ Functioning as a Self-Regulated Learner

	Class	Gender	Mean (Phase 1)	Mean (Phase 3)	Std. Deviation (Phase 1)	Std. Deviation (Phase 3)	N
Operating/ functioning as a self-regulated learner	3S	Female	3.82	3.73	0.49	0.40	27
		Male	3.69	3.76	0.40	0.32	15
		Total	3.77	3.74	0.46	0.37	42
	3X	Female	3.44	3.68	0.34	0.52	15
		Male	3.50	3.93	0.39	0.29	26
		Total	3.48	3.84	0.37	0.40	41
	3W	Female	3.65	3.97	0.37	0.30	21
		Male	3.57	3.71	0.52	0.42	15
		Total	3.62	3.86	0.43	0.37	36
	3Y	Female	3.72	3.91	0.35	0.35	26
		Male	3.70	3.84	0.30	0.40	12
		Total	3.71	3.89	0.33	0.37	38
	Total	Female	3.68	3.83	0.41	0.40	89
		Male	3.60	3.83	0.41	0.35	68
		Total	3.65	3.83	0.41	0.38	157

Table 38 Students' Perceptions of Teaching and Learning: Means, Standard Deviations for Phases One and Three for the Factor Negative Outcomes of Giving and Receiving Peer Feedback

	Class	Gender	Mean (Phase 1)	Mean (Phase 3)	Std. Deviation (Phase 1)	Std. Deviation (Phase 3)	N
Negative outcomes of giving and receiving peer feedback	3S	Female	2.83	2.57	0.58	0.54	27
		Male	3.03	2.76	0.80	0.60	15
		Total	2.90	2.64	0.66	0.56	42
	3X	Female	2.88	2.53	0.31	0.89	15
		Male	3.15	2.75	0.55	0.75	26
		Total	3.05	2.67	0.49	0.80	41
	3W	Female	2.57	2.69	0.53	0.63	21
		Male	2.79	2.90	0.59	0.81	15
		Total	2.66	2.78	0.56	0.71	36
	3Y	Female	2.65	2.47	0.49	0.49	26
		Male	3.02	2.75	0.71	0.36	12
		Total	2.76	2.56	0.59	0.47	38
	Total	Female	2.72	2.56	0.51	0.61	89
		Male	3.02	2.79	0.65	0.67	68
		Total	2.85	2.66	0.59	0.65	157

11.3 Changes in teaching practices

In Phase Three, as a result of the implementation of AfL strategies such as peer feedback, quality written feedback and self-regulated learning, the teacher participants seemed to be *"more aware of whether the [students] really understand"*

(Xena) the lessons. For example, according to Wanda, *"the reflection booklet updates me with what they (students) are having problems with"*. This increased awareness of the students' learning developments was possible because AfL strategies focused more on student-centred learning practices compared to the teacher-talk lessons that were mostly used by the teacher participants.

From the lesson observations, the first major change noted by the researcher was that the teacher participants started to inform the students about the teaching objectives at the beginning of the lesson. Figure 17 presents a model of teaching and learning that is consistent with the observed practices of the teachers when using AfL strategies. For example, the teachers gave time for the students to write their learning goals which were to be used later to evaluate their learning at the end of the lesson. The teachers would then continue with their teaching. Before the end of the lesson, time would be given for the students to reflect on their learning. Students from classes 3S, 3X and 3W were given between three and six minutes to complete their reflective writing. In contrast, out of the 14 lessons observed in 3Y class, only in four lessons were the students given three minutes to complete their reflective writing. In the other ten lessons, the students were instructed by Yasmin to reflect on their learning at home. When the researcher asked why this had happened, Yasmin said that *"after a while I stop doing the reflections, they (student) didn't need it anymore because they are very focused"*.
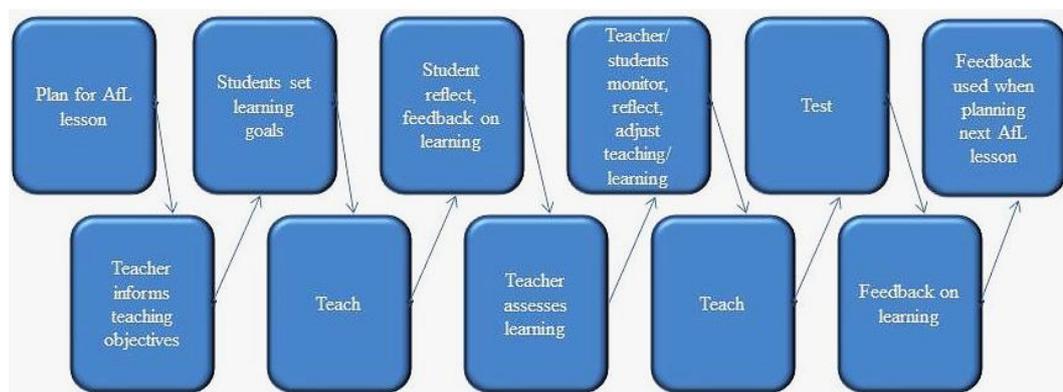
Figure 17. Flow chart summary of teaching practices using AfL strategies.

It was agreed during the learning workshops, that the teacher participants would collect, read and write comments on the students' reflection booklets, which gave the teachers an opportunity to assess each student's learning progress. Information gathered from the students' reflections were to be used to adjust teaching instruction

and student learning. Only Wanda said that the information gathered from the reflective writing pieces had helped her to *"address the learning issues"* faced by her students. The researcher also read the reflection booklets and summarised the learning issues faced by each class. These learning issues were then discussed with the teachers during the weekly Professional Learning Communities (PLC) session. As a result of these discussions, the teacher participants, particularly Xena and Yasmin, would address the learning problems in the next lesson. This procedure was repeated until the students sat for their summative test. After the test, the teachers reflected on the teaching and learning experiences and used the information gathered to plan for the next AfL strategies lesson.

The second change that was made was to use the performance standards checklist rubrics for every test and assignment. This decision was made by the teacher participants during the PLC session to inform the students of the performance standards and their current competency levels, which added value to the teachers' written feedback.

From the lesson observations, the teachers were seen going through the performance standards checklist rubrics with the students during the correction sessions, which helped the students to gain a clearer understanding of the examiner's expectations of a good essay. According to Wanda, this information about the students' learning progress was used to plan for the next lesson, whereas previously, the teachers would simply move on to the next topic, regardless of whether the students had understood the lesson or not. By taking into account the students' learning progress, the teachers appeared better able to promote deeper learning, which is imperative if the "students are to develop the skills they need for a knowledge society - a prerequisite for their success" (Darling-Hammond & Adamson, 2013, p. ii).

11.4 Changes in students' learning preferences

After participating in the AfL intervention, almost all the student participants from classes 3S, 3W and 3Y (with the exception of Felix (3S), Kiev (3W), Darwin (3Y) and Kenny (3W)), commented that they preferred student-centred learning, which the AfL strategies offered, compared to the teacher-talk lessons. Don (3S)

stated that the teacher-talk lessons resulted in him memorising the content, but when using AfL strategies, *"I don't memorise, just understand, I prefer this kind of style"*. In contrast, all the students from the 3X focus group said that they preferred teacher-talk lessons. The 3X focus group felt that they were *"forced"* (Winnie, Kaiden, Ben, Brent) to use AfL strategies. Ben said *"we don't like thinking"*, while Brent said he was *"too lazy ... not motivated"* to participate in AfL strategies.

Ynes (3Y) felt that when Yasmin used teacher-talk to teach writing skills, she was *"not teaching"* and could not assess her students' learning progress:

> *"She will say L1, L2, L3, she will write the evidence all, then give us the answer. She didn't teach us the skill on how to arrive at the explanation. At the end of the day, we didn't learn the skills"*.

For Mick (3S), he felt tired of listening to Wanda delivering information from the textbook and preferred hands-on learning activities such as peer feedback, which he felt made learning easy for him. According to Yan (3S) and Yuna (3Y), teacher-talk lessons led students to focus on copying the PowerPoint slides instead of understanding the lesson. As a result, the students ended up blindly memorising the content from the PowerPoint slides or the textbook and regurgitating it during tests. Natasha (3Y) also recounted how, in the past, she would memorise the content, but now after the peer feedback sessions and the introduction of the performance standards checklist rubrics, she learnt how to link the content to possible questions that could be asked during the tests, and was thinking more about the performance criteria and her competency levels when doing her assignments.

After the implementation of AfL strategies, the most common response from the students during the focus groups was that they became more aware of what they did and did not know. The student participants felt that, through their reflective writings, their teacher was kept informed of their learning difficulties and addressed any misconceptions in class, whereas previously they would disseminate the content without pausing to assess the students' learning progress. Other than evaluating your own learning, Yan (3S) said *"you are also able to know that the teacher knows the progress of your studies because what you write down, she is able to see and know where she has to improve on"*. In addition, the hands-on peer feedback activities seemed to have helped the students to be accountable for their own learning as they articulated their understandings and took action to remedy their learning gaps.

Hence, it seems that the use of AfL strategies by the teachers may possibly lead to improvements in the students' learning experience.

11.5 Students were more motivated

Harlen & Deakin Crick (2003) state that students' self-motivation levels for learning should increase when they participate in AfL activities. Both Wanda and Yasmin did not comment on this matter. However, Xena felt that her 3X students were more motivated in their learning after the implementation of AfL strategies. Xena said that when the 3X students were in control of their own learning, they gained a *"sense of higher self-esteem, higher self-confidence"*.

Xena believed that due to the use of AfL strategies, particularly the practice of setting learning goals and reflective writing, her students were more focused, as they took responsibility and ownership for their learning *"into their own hands now ... [because] if they don't ask themselves, they don't question themselves and they don't do anything about it, they knew they don't learn anything"*. As a result, Xena was confident to *"take a step back [because her students] can learn on their own and [she] just need to be there to guide them in the right directions"*.

Even though Suzie no longer taught 3S class in Phase Three, the professional learning workshops that she attended in Phase Two allowed her to use peer feedback in her Secondary Five Social Studies class. She also commented that peer feedback had changed her students' *"laid back"* attitude towards learning to that of a motivated group of students *"asking questions about what they know, what they don't know ... and now they want to know what they should know"*. From these interviews with Xena and Suzie, it is suggested that when the students were given control of their learning, there was a higher chance that they became motivated to fix their learning gaps. It is possible that if 'fixing' the learning problems is consistently done, this could prevent students from accumulating their learning problems to a point that it would become difficult to rectify them. However, if each learning problem is solved immediately, in the long run this should enhance learning.

11.6 Views about marks

From the focus group discussions, there seemed to be an overriding consensus that the performance standards checklist rubrics were better indicators of the

students' learning progress and process than were grades.

During the first peer feedback lesson, the teachers were seen explaining the performance standards with reference to the possible marks that could be awarded. This seemed to result in the students focusing more on assessing their peers' essays in terms of awarding marks instead of providing feedback. Since the main aim of the peer feedback process was to provide feedback and not marks, during the second peer feedback session, the teachers were encouraged to avoid making any reference in regard to the marks when they explained the performance standards/ assessment criteria. As a result, the students were seen to be more focussed on providing feedback to their peers instead of awarding marks.

The students seemed to value the feedback given by their teacher and peers through the checklist rubrics to chart their learning progress. In addition, the students appeared to believe that good grades would automatically come if good learning had taken place: *"I think you have to put in effort monitoring learning because that's when you start to get more marks"* (Nea, 3S). Natasha (3Y) also indicated that she now looked at the performance standards checklist rubrics to scrutinise her performance instead of using the grades as an indicator of her learning performance.

Despite acknowledging the importance of monitoring one's learning progress, individually the student participants indicated that grades were important when each of them was asked the question 'now that you had benefited from monitoring your learning, are your marks important?' According to Julius (3W), *"my mom sees the marks, not how I write"*. Ben (3X) said that in Singapore, marks are important and *"marks is also a gauge on whether you understand or not"*. Wanda even admitted that, as a teacher, she used to believe that students who attained high marks in tests and examinations were successful students. However, after implementing AfL strategies, Wanda felt that a successful learner may not necessarily attain high marks *"because some students, they just don't do well in tests and exams, if they actually showed understanding throughout the whole learning process, then I think that he is actually a successful learner"*. Both Yasmin and Wanda felt that the concept of a successful learner and of learning must be reviewed and redefined because when successful learning had taken place, only then would a successful learner emerge.

According to Suzie, there was nothing wrong with wanting to perform well in the GCE O' level examinations however teachers should also teach the students other skills to help them face the challenges of the 21st century:

"Values, thinking skills, all these are very important as well ... you should be aiming to learn and learn because eventually at some point, students should know that they are going to fall and they need to know what is going to bring them up. You don't need to pass 100% all the time, you just need to learn how to cope with certain things, how to think and how to conduct yourself. Innovative, creative teaching, 21st century skills, oh my god our Department is like 1950s, seriously, really I'm serious, how are we preparing our students to be 21st century kids?"

Thus, the teachers seemed to be reflecting a view similar to Block, Airasian, Bloom & Carroll (1971), that educating the society (e.g., potential employers, parents, schools, teachers and students) that grades should not be solely used to make a multitude of decisions in life is important because grades could be a misleading measure of learning, and decision-makers and employers could be led astray.

11.7 Perceptions of peer feedback

In this section, the students' and teachers' perceptions of peer feedback are described, particularly how the students perceived that peer feedback would help them to learn, as well as the problems and challenges they faced when using peer feedback. The teacher and student participants also made recommendations about how to sustain the use of peer feedback in Secondary Three Express Social Studies classrooms.

11.7.1 Analysis of the reflection booklets

Two entries from the students' reflection booklets pertaining to the two peer feedback activities were examined using a multiple response frequency strategy (Table 39). The researcher took each student's entry and gave them a score for each code (see Chapter 9 sub-section 3) during the process of categorisation. From the preliminary analysis, these entries showed the students' mixed views about the effectiveness of the peer feedback sessions to improve their learning.

Note that the following abbreviations are used in this section: PF1 refers to the first peer feedback activity on the Sri Lanka conflict while PF2 refers to the second

peer feedback activity on the Northern Ireland conflict. For example (PF1-20 (12.8% of the students)) refers to the first peer feedback activity followed by the number of students who stated the different responses and the percentage of students who identified the factor. A total of 156 reflection booklets were analysed.

With reference to Table 39, the first column 'factors written by respondents in their reflection booklets' refers to the student participants' views about how peer feedback had helped them in their learning and the problems they faced when using peer feedback. (N) refers to the number of students that wrote the identified factor/s in their reflection booklets (refer to the above for PF1 and PF2). The last two columns give the percentage of the students who identified the factor/s. In this section, the number of students identifying the factor/s is presented.

More than half (PF1-90 (57.7%)/ PF2-84 (53.8%)) of the 156 student participants said that they learnt how to explain at least one factor that caused the Sri Lanka (PF1) and Northern Ireland conflicts (PF2), which was one of the teaching/ learning objectives targeted by the teacher and student participants. The students also indicated that they had used the performance standards checklist rubrics when assessing their peers' essays. 67 (42.9%) students said that they had used the checklist rubrics during the second peer feedback session as compared to only 49 (31.4%) students during the first peer feedback session.

Table 39 Multiple Response Data Consolidated From Two Reflection Booklet Entries on Peer Feedback Activities

Factors written by respondents in their reflection booklets	Responses			
	Peer Feedback 1 (PF1) (N)	Peer Feedback 2 (PF2) (N)	Peer Feedback 1 % of students	Peer Feedback 2 % of students
Action taken to close learning gaps	33	27	21.2	17.3
Learnt content/skills and avoid mistakes	90	84	57.7	53.8
Performance standards checklist rubrics guided students during peer feedback	49	67	31.4	42.9
Identified peers' weaknesses and strengths	34	61	21.8	39.1
Teacher assisted students during peer feedback activity	4	15	2.6	9.6
Students knew how to give feedback or mark	2	5	1.3	3.2
Opportunity to evaluate own learning	21	5	13.5	3.2

Factors written by respondents in their reflection booklets	Responses			
	Peer Feedback 1 (PF1) (N)	Peer Feedback 2 (PF2) (N)	Peer Feedback 1 % of students	Peer Feedback 2 % of students
Participating in peer feedback has benefited students in their learning	25	25	16.0	16.0
Group members performed well in giving feedback	6	32	3.8	20.5
Group had effective discussion	5	26	3.2	16.7
Students could improve in their essay from feedback given by their peers	18	23	11.5	14.7
Students believed they gave or receive feedback to/from their peers	18	35	11.5	22.4
Students needed more time to assess and give feedback	6	9	3.8	5.8
Peer feedback a good method to learn about assessing a variety of essays	12	14	7.7	9.0
Learnt how to be an examiner	30	16	19.2	10.3
Peer feedback helped students to score in assignments	15	12	9.6	7.7
Peers helped to clarify doubts	14	27	9.0	17.3
Peer feedback activity was enjoyable	23	44	14.7	28.2
Students marked better in terms of accuracy	0	18	0.0	11.5
Students marked with honesty	20	4	12.8	2.6
Wanted to do peer feedback again	7	12	4.5	7.7
Teacher to mark because more accurate	1	1	0.6	0.6

More students indicated that they were able to 'identify their peers' mistakes' (PF1-34 (21.8%)/ PF2-61 (39.1%)) in the second peer feedback session with the help of the checklist rubrics. A possible reason that could contribute to this was the students' familiarity with the use of the checklist rubrics, which should have aided their understanding of the performance standards. This could also explain the positive change from Phase One to Phase Three on the survey for the factor 'positive outcomes of giving and receiving peer feedback'. A possible reason could be that the students felt that their peers were able to help them identify their mistakes, thus giving them an opportunity to rectify these mistakes before they submitted their essays to the teacher for marking.

During the first peer feedback activity, only a handful of students (PF1-5 (3.2%) felt that they had engaged in 'effective discussions' with their peers. A possible factor that could contribute to this belief was the students' lack of familiarity with the

peer feedback process and their inability to utilise their peers' knowledge to help them close their learning gaps. However, as the students became more comfortable and knew what to do during the peer feedback discussions, more students found that they had 'effective discussions' (PF2-26 (16.7%)) during the second round of the peer feedback process. With the introduction of peer feedback in Phase Three, the students tended to indicate that feedback received from their teacher and peers was useful for improving their learning performance. Previously, they had received very little feedback from their peers in Phase One.

More students stated that their peers were helpful in 'clarifying their doubts' after the second peer feedback session (PF1-14 (9%)/ PF2-27 (17.3%)). More students stated that (PF1-23 (14.7%)/ PF2-44 (28.2%)) they 'enjoyed' the peer feedback activity in the second session as the students became accustomed to the peer feedback process. From the reflection booklet entries, 18 students stated that they 'marked better in terms of accuracy' during the second peer feedback session (PF1-0 (0%)/ PF2-18 (11.5%)). Only one student mentioned that the 'teacher should mark' their essays to ensure accuracy (PF1-1 (0.6%)/ PF2-1 (0.6%)). However, during the Phase Three focus group discussions, all the students from the focus groups felt that the teacher rather than the students' peers should mark the essays to ensure accuracy. This uncertainty in the accuracy of the feedback/ marking could also explain the relatively low number of students (PF1-33 (21.2%)/ PF2-27 (17.3%)) using their peers' feedback as feed forward ('action taken after peer feedback activity') to improve their essays before submitting to their teacher for marking.

Only a few students stated that the peer feedback activity provided an 'opportunity to evaluate their own learning' (PF1-21 (13.5%)/ PF2-5 (3.2%)). Only the 3S focus groups said that they had used peer feedback to evaluate their learning (see Chapter 11 sub-section 7.3). A possible explanation for this result was that the students saw the setting of learning goals and reflective writing as strategies that were more related to self-regulated learning compared to peer feedback, which they perceived as an activity that focused only on the giving and receiving of feedback.

The multiple response frequency results from the students' reflection booklets were useful in providing a glimpse of the students' perceptions of the peer feedback sessions immediately after they participated in the activities. These results were

important because each student had the opportunity to write about the strengths and weaknesses of the peer feedback activities, particularly how the activities had helped them to improve their learning. The multiple response results were also used by the researcher to further probe the students' views about the peer feedback activities.

11.7.2 Quality feedback, quality learning

There is evidence that peer feedback has the potential to enhance student learning because of the timely feedback offered by multiple peers (Cho & MacArthur, 2010). As a result, students become more engaged in their learning because they are involved in more complex evaluations to improve the quality of their essays (Cho & MacArthur, 2010; Cho & Schunn, 2007). In the present research, peer feedback was perceived as a useful classroom instruction by Suzie because due to the large number of scripts that she needed to mark, she would often return the scripts late with *"one or two lines of comments"*, which would have no effect on the quality of the essay. However, through the peer feedback process, her students could immediately revise their essays based on the multiple forms of feedback, instead of waiting for the teacher to mark the essays. Suzie admitted that the feedback given by the students might not be *"perfect, but it is so much better as compared to when I mark the papers myself"*. She said that the benefits her students gained could also be applicable for the Secondary Three Express Social Studies students.

Wanda also agreed that her students had benefited from the peer feedback sessions. She noticed that *"when they (students) marked, they actually reinforced the ideas, and when they discussed with their friends, they can clarify their points"*. According to Xena, the students from class 3X liked interacting with one another instead of listening to her teacher-talk lessons because the students *"value the fact that we allow them to interact in class"*. Even the students from the 3S, 3X and 3Y focus groups felt that it was easier to understand their peers' explanations because *"friends can phrase it in a way it's easier to understand"* (Natasha, 3Y), which could also explain why there were statistically significant changes for the survey factor 'positive outcomes of giving and receiving feedback' from Phase One to Phase Three.

Another reason that could account for the positive change for the factor 'positive outcomes of giving and receiving feedback' was through the peer feedback process,

the students were given more practice to write their essays since they needed to make evaluative judgements as they revised their draft essays based on their peers' feedback, which is consistent with other findings in the higher education research (Boud & Dochy, 2010; Cowan, 2010; Sadler, 2010). Wina (3W) mentioned that through the peer feedback process she could finally write an explanation of a factor that caused the two conflicts being studied: *"I don't know how to write explanation last time, but then after I do peer feedback, then I know more about explanation"*. Don (3S) found that because he needed to revise his draft essays based on his peers' feedback, he was able to *"reassess his understanding of the content and skills"* based on the performance standards as he decided whether to accept the feedback given. Xena said that because of the peer feedback process, the students *"manage[d] to perform well and able to write three paragraphs which were impressive"*, whereas previously the students *"struggled"* to even write one paragraph after three terms of doing Social Studies.

Hence, the timely feedback received by the students seemed to have allowed them to actively reassess their learning and provided them with the opportunity to make decisions about whether to accept their peers' feedback, as suggested by Chen, Wei, Wu & Uden (2009). This decision-making process during peer feedback could contribute to the students' cognitive development as they tested their knowledge to determine the accuracy of the feedback and the quality of their own essays, as suggested by Li, Liu & Steckelberg (2010).

11.7.3 Opportunities to monitor learning

Quality learning involves students actively monitoring, evaluating and regulating their own learning. Meanwhile, peer feedback can provide opportunities for students to do just this (Nicol, 2009; Nicol & Macfarlane-Dick, 2006). In the present study, however, only Don, Nea, Fern and Freya from class 3S said that peer feedback helped them to monitor their learning. Don (3S) said that if he could give quality feedback to his peers, it would indicate to him that he had understood the topic. In addition, Freya (3S) felt that the peer feedback process would benefit both the giver and the receiver of the feedback because *"it helps you know what you understand and what you don't understand. While helping your friends, you are also helping yourself"*. This viewpoint could also account for the positive experience the students feel when they give and receive peer feedback.

Xena was heartened when she noticed that the students actually used their peers' feedback as feed forward, which she felt was another indicator of self-regulated learning. She further explained:

"In the first semester, we told them you don't have this, you don't have that, but in the next essay that they did, it just didn't come out. Surprisingly this time round, you really see them trying ... they actually internalised and they worked on it to make it better ... I guess their friends play an important part in helping them learn".

Only Xena noticed that her students from class 3X wrote better quality essays, which she attributed to the students actively monitoring their learning. Wanda felt that *"half of her students are actually self-regulated learners"* while Yasmin said her *"3Y specifically I don't think they are self-regulated. Why huh? I mentioned before they are really not into it".* Only Xena said that due to peer feedback, which gave the students the *"opportunity to monitor their learning",* there were improvements in 3X's test marks. She said *"one very important outcome is really the test results ... from less than 10 passes to less than 10 failures. Obviously, something must have worked somewhere".*

Hence, through peer feedback, the students were given an active role to monitor their peers' and their own learning as they probably underwent what Nicol (2013) describes as "processes of evaluation and knowledge building" (p. 35), which are necessary to enhance learning.

11.7.4 Improvements in the quality of peer feedback

Xena and Wanda felt that there were improvements in the quality of feedback given by the students as they became familiar with the peer feedback process. Wanda believed that with *"constant practice"* and the continual use of peer feedback, the students would be better able to provide quality feedback. Xena felt that after the first peer feedback session on the Sri Lankan conflict, the students were more forthcoming in participating in the next peer feedback session on the Northern Ireland conflict. She also noticed that the quality of feedback was *"less superficial"* during the second peer feedback session. Yuna (3Y) said that peer feedback *"should be like across the year and not like one time"* and *"must be continuous'* (Kiev, 3W) so that they have *"more time to practice"* (Ynes, 3Y) and to become more familiar with the peer feedback process to be able to give quality feedback. Thus, as the

students became familiar with the aims and the feedback processes, they would be able to give better feedback to their peers.

11.7.5 Understanding the language of assessment

Another reason that could account for the generally positive responses to the survey question about giving and receiving feedback was that the students were given the opportunity to understand the language of assessment, which is often considered to be 'guild' knowledge reserved for the teachers (Sadler, 1989). Manuel (3Y) mentioned how peer feedback provided a hands-on learning experience which allowed him to *"apply"* what he had learnt about the performance standards in the marking process. He felt that through peer feedback, Yasmin went through the performance standards in *"more detail"* and allowed the 3Y students to clarify their doubts about the performance standards. From the lesson observations, it was established that Yasmin devoted one whole hour (as compared to Xena and Wanda) to explaining the performance standards; she also gave the students hands-on exercises on peer marking before the actual peer feedback session began.

Natasha (3Y) also credited the peer feedback process for helping her to understand the language of assessment, particularly the assessment terminology used by Yasmin:

> *"Last time, the lesson, whenever you hear the word L1, L2, L3 is all spoken by the teacher. She will talk about levels, then we all like huh? What are you talking about? Then now, like after this (peer feedback), the L1, L2 are like all amongst (understood) the students".*

Sabina (3X) said that her participation in the peer feedback activity had helped her to understand the language of assessment and had improved her writing skills:

> *"Before, my essay is totally ridiculous, like Level 1, two marks because I don't know what to put in and I don't know how the teacher marks. But, in Term Three, there was peer feedback, Ms. Xena gave us the SWA worksheet and the comments. I can see how they marked, so I knew what was my mistake, why did I do this mistake and my friends helped me marked and ticked which one I don't have, which one I lack of and I improve on. Now my marks are better".*

Therefore, through peer feedback, the students seemed to better understand the marking process. With better understanding of the marking procedure and the language of assessment, the students should understand the requirements needed to achieve the highest competency level, as suggested by Gielen et al. (2010).

11.7.6 Partnering compatibility

One of the major potential problems raised by the teacher and student participants in Phase One about peer feedback was the compatibility of the partnering, which may have contributed to a number of possible negative effects in giving and receiving feedback. This concern was followed up in the Phase Three interviews and focus group discussions.

When the student participants were asked about their group members' performance during peer feedback, almost all the male students, particularly from class 3Y, said that they had experienced a number of negative outcomes during the first peer feedback activity. Darwin (3Y) outlined some doubts about the quality of the feedback given by his group members:

> *"I was paired with two persons ... the comment that they give me was total nonsense. What they tell me, your essay is so good, perfect, you don't need to change anything, no flaws, L5 ... so I edited the last paragraph. Then, I turn the [page], Ms Yasmin gave me a L3 only. It clearly shows the inaccuracy".*

Darwin felt that his group members were not genuine in giving feedback and he preferred to be partnered with Quan (3Y), who he felt was smarter than his own group members.

Ben (3X) suggested that in order to solve this problem, it would have been better *"to work with your good friends and maybe it will be more productive"*. However, Julius (3W) said that this might not necessarily be beneficial because *"friends might not have the mindset to work"*. In contrast, Natasha (3Y) suggested that the students' personality be taken into consideration during the grouping process. On this matter, Rahman (3S) recounted how one of his group members remained quiet and failed to contribute during the peer discussions because the other members were more talkative.

Kiev (3W) highlighted that it was important to avoid grouping students together based on the same abilities. He believed that the peer feedback groups should consist of higher-ability, average-ability and lower-ability students. He said that having the same ability groupings would not help the students in their learning compared to a mixed ability grouping where the higher-ability students could help the lower-ability students: *"I don't get the point why the smart people come together and stupid*

people come together. The smart will become more smart and the stupid people will be more slacking". Hence, *"get[ting] the correct people to work together"* (Xena) was an important step towards ensuring the effectiveness of peer feedback. According to Sage (3X), as long as the students understood the aim of peer feedback, which was *"for the betterment of the other person"*, it should encourage the students to work together regardless of ability and personality.

The general consensus from the focus groups seemed to suggest that to make peer feedback work, the student participants would prefer to choose their own partners. This may also solve the issue of validity of the given feedback because the students' peer partner was someone that they could trust to help them with their learning.

11.7.7 Problems in using peer feedback

Despite the apparent positive outcomes of peer feedback, as reflected in the pre- and post-intervention surveys and from the focus groups and interviews, the general consensus in the focus groups seemed to be that peer feedback was a *"waste of time",* as expressed by Darwin (3Y) and Winnie (3X). Nea (3S) also found peer feedback to be *"'ma fan' (troublesome)"* because she needed to do more *"thinking"*. This same sentiment also came from the other focus group participants from 3S, 3X, 3W, and particularly, from 3Y students. Yasmin explained that many students *"don't believe in thinking"* and that the students' idea of effective teaching and learning practices was when the teacher just *"stand in front [of the class] and deliver the PowerPoint"*.

Wina (3W) found it confusing when she received conflicting feedback from her peers and Wanda: *"my friend said like this is not good but teacher commented that it was good"*. As a result, Caley (3Y) said that she did not take into account her peers' feedback when reviewing her draft essays because she doubted the validity of the feedback. From the lesson observations, the researcher found that the majority of the 3Y students, particularly the male students who were very competitive such as Darwin, Manuel and Quan, chose not to take into account their peers' feedback when reviewing their essays. Darwin said he did not *"trust"* his peers' feedback.

Both Ben (3X) and Kaiden (3X) mentioned how they felt that the feedback given by their peers was not constructive and lacked in quality because it was *"vague"*, which made improving the essays difficult. Kiev (3W) was also worried about the reliability of the feedback given by the lower-ability students. The conversations between Yuna (3Y) and Ynes clearly showed how they doubted their peers' ability to give feedback and, in Yuna's case, her own ability to give good feedback:

Ynes   *You are not sure whether to follow or not to follow (heed the given feedback). Sometimes your friend, don't know whether she says true or not (give accurate feedback), her essay also not good.*

Yuna   *My partners Jericho and Yollanda, they were very good at marking so I benefited, but when Ms. Yasmin actually goes through the performance standards, I have no idea what she was talking about. So difficult to understand then, I just marked and if it looked like Level 3, I just put Level 3. It might be Level 4 or Level 2 ...*

According to Manuel (3Y), many students participated in the peer feedback activities *"for the sake of doing it"* and ended up *"giving crap"* (Ben, 3X) feedback to their peers. Wade (3X) said this happened because the students were not clear about what to expect from their peers. In addition, the lack of a strong foundation on how to provide quality feedback led Darwin (3Y) to conclude that peer feedback was just *"not good enough to help us improve ... and a waste of time"*. Fern (3S), Sabina (3X), Julius (3W), Darwin (3Y) and Kiev (3W) felt that, at the end of the day, the teacher's assessment was more valid than that of her peers.

Hence, it seemed that even though the students understood the performance standards, this may not always have translated into their marking and feedback. Students also sometimes questioned the credibility of their peers' feedback and perceived that, on occasions, peer feedback may not be helpful for improving their learning. Finally, it seemed that the students' were seeking detailed feedback and explanation from their peers rather than brief comments or questions. They seemed to have higher demands about feedback from their peers than from their teachers. For example, they may have accepted a simple question of 'why' from the teacher but not from their peers.

11.7.8 Making peer feedback work

When asked how to make peer feedback effective, Wanda said that the introduction of peer feedback was *"quite an eye opener"* as she changed her

perception of who has the authority to give feedback: *"last time when I taught, it feels that only the teacher has the right to give marks and comments"*. She was also convinced that her students were capable of giving feedback if given the opportunity. Hence, it seemed that changing the beliefs of the teachers and the students about the effectiveness of peer feedback was an important start for peer feedback to be made part of classroom instruction. This perspective concurs with the views of Mangelsdorf (1992) and Yang, Badger & Yu (2006).

In contrast, Yasmin could not see how peer feedback could work at Fairmont because the students did not see peer feedback as an *"assessment by an authority (teacher)"*. She said the students saw assessment in the form of summative tests and examinations rather than an evolving process where learning needed to be reassessed constantly. Freya (3S) felt that, at the end of the day, the teacher's assessments and comments matter the most in learning because *"it's not our friends who grade our paper, it's the teacher, so I don't see the point why our friends should be the one giving feedback when actually the teacher should be giving them"*.

Yuna (3Y) revealed that the problems of using peer feedback stemmed from the students knowing the identity of their marker and questioning their credibility. She suggested that all markers and writers of the essays be kept anonymous because *"if you don't know who is marking your essays, you won't have the doubt ... then it will be like, ok maybe this person is good"*.

According to Yasmin, demonstrating to the students how peer marking and feedback were conducted could also help the students to become familiar with the peer feedback process. Julius (3W) also suggested that the teacher could *"mark a sample essay and explain to us, so that we understand more"* how the marking and application of performance standards could be achieved during the peer marking process.

Therefore, addressing issues that arose from the use of peer feedback could possibly make peer feedback work, particularly if the identities of both the markers and the essay writers were kept secret, which may overcome the problem of the credibility of the markers and may also potentially reduce the students' anxiety about the validity of the assessment.

11.8 Perceptions of self-regulated learning

In this section, the students' and teachers' perceptions of self-regulated learning are described, particularly how the students perceived self-regulated learning as being useful in helping them to become more aware of what they know and do not know, as well as the problems and challenges they faced when setting learning goals and writing their reflections. The teacher and student participants also made recommendations about how to sustain the use of self-regulated learning in the Secondary Three Express Social Studies classroom.

11.8.1 Opportunity to self-regulate learning

This section presents the results for the teacher and student participants' beliefs about the benefits of self-regulated learning. These beliefs may help to explain the pre-post difference for the survey results on the factor 'operating/ functioning as a self-regulated learner'. The teacher and student participants also reflected on the challenges they experienced in setting learning goals and writing reflections, and offered suggestions to sustain self-regulated learning practices.

With the introduction of the setting of learning goals and reflective writing, most of the students began to monitor their own learning progress as they began to realise that *"learning is one's own responsibility"* (Nea, 3S). In Phase Three, Xena felt that, in general, the students made it their business to understand their current competency level and the action they needed to take to reach the highest competency level. For example, Alex (3Y) said how he now actively self-regulated his learning by asking himself questions to assess his understanding and *"if I can't answer my questions, it means I'm not sure yet, I will ask for help"*. With self-regulated learning, the students from the focus groups agreed that they became aware of their learning problems early on, which could account for the generally positive perceptions the students had about self-regulated learning in the survey since they could take action to rectify their learning problems. In Phase One, Nelly (3X) confessed that she was apprehensive about the effectiveness of the reflective writing process to improve learning. However, in Phase Three, in her reflection booklet, she acknowledging that self-regulated learning had benefited her:

> *"I used to say that, nobody will write ... but then now, when I write, I know what I'm good at and what I'm not good at, and then I can improve myself from there. So, I take back my words that reflection booklet is not useful".*

The introduction of the reflection booklets in Phase Three helped the students to become more self-regulated in their learning. Both the teacher and student participants in general said that the setting of learning goals and reflecting on learning were challenging tasks because this was the first time the student participants had started to self-regulate their learning. However, as the students actively monitored their learning, more of them became aware of their current competency level and strived to reach higher performance standards, whereas previously they were uncertain of their own performance.

11.8.2 More focused learning

With the introduction of learning goals and reflective writing, the consensus of the focus group participants was that teaching and learning practices became more focused, which could help explain the significant differences between the pre- and post-intervention survey results for the factor 'operating/ functioning as a self-regulated learner'. Wade (3X) said that he now knew *"what we are supposed to learn on that day"*, whereas previously he would wonder what the lesson for the day was about. Yan (3S) said that informing the students of the teaching/ learning objectives directed them towards *"what to pay attention to"*, especially the important concepts that needed to be focused upon. Yali (3X) indicated how his reflections on his learning had made him more aware of his *"weaknesses, strengths and areas needed to improve"*. Manuel (3Y) said that he became a *"better learner"* because he was more focused on monitoring his learning progress now than he was prior to the use of the reflection booklet.

From the students' reflection entries, it seemed that many students saw the process of self-regulated learning as being limited to identifying their learning weaknesses. However, self-regulating the students' learning could also have increased their motivation to learn more (Pintrich, 2004). This was shown in Levi's (3X) reflective writings as he mentioned how he had mastered writing Level Four answers for his essays and now felt motivated to write a Level Five answer (the highest performance standards for an essay) in his next essay assignment, even though Xena had yet to teach the class about writing a Level Five answer. These results appear to be consistent with the view of Paris & Newman (1990) that "self-regulated learning just might have the horsepower, or solar power, for the ride to new

territory" (p. 88). Thus, when the students were more focused on self-regulating their learning, it seemed that they were more self-motivated to achieve the highest performance standards on their own.

11.8.3 Feedback on teaching

The reflection booklets used in Phase Three had played multiple roles apart from improving the students' learning experiences through self-regulation. According to Xena, the students' reflective writings had also increased her awareness of her students' learning struggles. She said she always *"assumed"* that her students had understood her lessons, however as she became aware of their learning struggles, she began to *"assess [her] own teaching effectiveness"* and to change her teaching instruction to help her students to better learn the content and skills.

Only the 3S student participants, particularly Yan (3S), considered their reflective writing to be important feedback, not only to inform Wanda of their learning progress, but also to inform *"where the teacher can improve on"* in her teaching. Wanda agreed that the reflection booklets enabled her to understand her students' learning progress. She said that previously, her assessment of her students' learning was conducted during the occasional verbal questions she asked in class, which were answered only by the vocal students. Wanda admitted that she only knew that her students did not understand her lessons *"after they have done their test"*, which was, by then, too late for remediation. However, the reflection booklets *"help me to update what problems they have"*, just in time for remediation.

11.8.4 Challenging existing beliefs

Despite the positive outcomes many of the students gained from self-regulated learning, particularly the reflective writing process, Xena noticed that the majority of her 3X students still resisted the idea of writing their learning reflections. She believed this happened because *"they (students) have their own mindset towards what is learning ... that is, teacher should teach and as a student, I sit there and I listen, then I will learn"*. Xena said her students strongly believed that it was the teacher's responsibility to monitor and ensure that the students had learnt because this had been the main *"duty of teachers"* for years.

As for class 3W, Wanda said that the students took about five weeks to become accustomed to setting learning goals and to complete their reflective writing. She

said there were a number of students who accepted and resisted the practice of self-regulating their learning. She noticed that the male students, particularly Kiev (3W) and five of his friends, resisted setting learning goals and reflective writing compared to the female students. Wanda believed that these students were *"so use to the lecture style ... they don't want to move out of their comfort zone because it has been working well with them for so long"*.

According to Yasmin, a majority of the 3Y students, particularly the male students, equated self-regulating their learning to that of the teacher *"abandoning"* her responsibility to monitor and ensure that learning had occurred among the students. She deemed her students to be *"passive learners"* who placed the responsibility for teaching and learning solely in the hands of the teacher because *"it's the teacher's job to teach"*. She further explained that it would be difficult to ask her students to be self-regulated learners if they did not see the benefit of being one. Additionally, Yasmin admitted that she must see *"the benefits of it (self-regulated learning) to believe in it, because we all grew up in the system (teacher-centred learning). It is very difficult to change mindsets if you have been in it for a good 20 years"*. Besides, according to Yasmin,

> *"To be very honest, the national goal is still academic-driven results. So, it is impossible to request your Department or your school to support you to do things like this (AfL strategies) that doesn't guarantee results. I think it is not logical. We must after all serve the organisation needs"*.

The male students from the 3Y focus groups, particularly Darian and Darwin, confessed that their learning aim was to do well in the GCE O' level Combined Humanities examinations and to achieve this aim, they would predict and then memorise the three essays that they thought would be tested. Darian and Darwin believed that by learning for the test, they would do well in the national examinations and hence, there was no need to set learning goals and evaluate their learning.

Based on the interviews and focus group discussions, the teachers and students, in general, stated that they must see the value of using self-regulated learning before they could be convinced of its benefits. The male students from the higher-ability classes (3W/3Y) seemed to be more apprehensive about goal setting, monitoring and evaluating their learning compared to the 3W and 3Y female students, which is consistent with the findings of Zimmerman & Martinez-Pons (1990) and Ablard &

Lipschultz (1998). It seems that in order to make self-regulated learning practices part of the teaching and learning culture, redefining the roles of the teachers and the students in teaching and learning practices is an important initial step that must be taken.

11.8.5 Lack of time to reflect on learning

Another reason mentioned by the majority of the student participants that caused them to be reluctant to self-regulate their learning was that they felt that the time allocated for reflective writing was inadequate. Yan (3S) admitted that it was impossible to evaluate his learning in five minutes. When asked whether more time was needed, he said that this would *"eat into our lesson time"* and made Wanda *"to read her PowerPoint slides faster"* to complete the syllabus. Don (3S) said that when Wanda *"rushes through her lesson too fast … [he] cannot understand"*. Yuna (3Y) also voiced her frustrations when she said *"what is the point of the learning goals because half of the time Ms Yasmin forgets it. I mean in the end, we don't even get the time to write it (reflective writing)"*. Kaiden (3X) suggested that for every half an hour of teaching, the students should be given some time to evaluate their learning, instead of doing the reflective writing at the end of the lesson.

Even though time was allocated for reflective writing as stipulated in the AfL strategies' lesson plans, it seemed from the observations that the teachers often sacrificed the time allocated for reflective writing to cover the syllabus. It seems that as long as the teachers gave priority to completing the syllabus over reflective writing, even allocating more time would not guarantee that the teachers would not continue to limit the time for reflective writing in order to complete their syllabus.

11.8.6 Reasons for abandoning self-regulated learning

At the end of Phase Three, all the teacher participants made the decision to stop using the reflection booklets. When asked why this decision was made, the teachers, particularly Wanda, said that the students *"resisted"* the use of the reflection booklets to self-regulate their learning. However, only Yasmin felt that the practice of setting learning goals and reflective writing had not contributed to the students' learning improvement.

As a result, the teaching/ learning objectives were no longer shared with the students and grades were now solely used to determine the students' learning

progress (Yan, 3S). For the majority of the students from the focus groups, the absence of setting learning goals and reflective writing was welcomed because they believed it made no difference to their learning practice (Kiev, 3W; Darwin, 3Y; Felix, 3S; Brent, 3X; Julius, 3W; Amy, 3W). According to Alex (3Y), many 3Y students *"did not put in the effort"* when they wrote their reflections, which resulted in an inaccurate evaluation of their learning progress. Don (3S), Julius (3W), Darwin (3Y) and Wina (3W) felt that they were being *"forced"* to reflect on their learning. They confessed that they just wanted to complete their reflective writings to *"avoid getting into trouble"* (Don) with their teachers and doubted the benefits of reflective writing to improve their learning. Kiev (3W) questioned the effectiveness of evaluating his own learning because he felt it would be pointless to write about his learning difficulties if he could not get help to remedy his learning gaps.

A majority of the students, especially the 3S and 3Y students, seemed to suggest that they did not know how to reflect on their learning. Natasha (3Y) felt like she was being *"thrown into the deep end of the pool. Ok, write your learning goals, like huh? We didn't really get an opportunity to understand the rationale of it!"* Yan (3S) felt that the rationale for self-regulated learning and the importance of reflective writing should be clearly explained and understood by the students.

It was surprising to hear the students' comments about not having had the rationale explained and/or not being guided on how to set learning goals and write their reflections. This was because the teachers did explain the rationale of self-regulated learning and only showed samples of reflective writing in the first, and subsequently, the fifth Social Studies lesson (based on the lesson observation notes). During Phase Two of the students' learning workshop, the researcher dedicated a section to focusing on self-regulated learning, where the students had hands-on experience of writing learning goals and critiquing samples of reflective writing. Therefore, it is important to analyse why these steps taken to help the students to become self-regulated learners failed to sustain the practice.

11.8.7 Suggestions about sustaining self-regulated learning

When asked how best to encourage the students to self-regulate their learning, Nelly (3X) said that the students were known to be lazy and lacked the motivation to self-regulate their learning, therefore *"there is no other option, the teacher needs to*

force in order for us to do it". Winnie, Ben and Kaiden from 3X said that the students must discover the value of self-regulated learning. Other suggestions to help students self-regulate their learning were to have the teachers *"do like a recap ... because it's easier"* (Manuel, 3Y) for the students to listen and think about whether they have learnt. Zen (3S) wanted the teacher to prepare a checklist, where the students could indicate whether they had understood the lesson. This checklist would then be handed to the teacher for her to analyse and *"see whether she can improve and help us"*. Felix (3S) said he *"just need to think to myself"* to evaluate his learning instead of writing it down in the reflection booklet.

These suggestions provided by the students involved the teachers taking actions to evaluate the students' learning. From the students' comments and reflections, it seemed that self-regulating the students' learning was the responsibility of the teacher and that reflective writing was solely to inform the teacher about the students' learning progress and not vice-versa.

11.9 Perceptions of quality written feedback

In this section, the students' and teachers' perceptions of quality written feedback using the performance standards checklist rubrics are presented, particularly how the students perceived the checklist rubrics in helping them to become aware of their existing competency level and the actions that they needed to take to achieve the highest competency level. The teacher and student participants were also asked to elaborate on the problems and challenges they faced when using the performance standards checklist rubrics and to make recommendations about how to sustain the use of the rubrics to ensure quality written feedback.

11.9.1 Positive outcomes of using the performance standards checklist rubrics

The consensus among the teacher and student participants was that the introduction of the performance standards checklist rubrics had a positive impact on the students' learning in general. There were no negative comments made by the teachers and students about the use of the checklist rubrics to improve the quality of written feedback. This could also account for the students' favourable responses on the factor 'usefulness of feedback to improve learning and performance'.

Wanda felt that, through the checklist rubrics, the students were able to understand the performance standards. In addition, the checklist rubrics gave the teachers more specific insight into the students' learning gaps (Schafer, Swanson, Bené, & Newberry, 2001). Xena also said the checklist rubrics were able to indicate to the students their current competency level: *"ok so I am at L3, I managed to get the link but I don't have something else"*. Nea (3S) indicated that the information from the checklist rubrics was used as feed forward because she knew *"which level [she is] lacking of ... so you know what you have to write the points, the levels that you did not achieve"*. Hence, this allowed the students to take precise actions to rectify their weaknesses and to reach the required performance standards.

The checklist rubrics seemed to be important because they added value to the teachers' written feedback, since they were detailed enough to help students to identify where they actually went wrong in their essays. Felix (3S) said, *"now because of the checklist, I already know what I think I am missing"*. The 3Y focus group participants seemed to agree about how they found the checklist rubrics useful for writing better essays. Yuna (3Y) agreed that the performance standards checklist rubrics had provided her with *"a more clear indication ... if I don't get the level, then the checklist helps me to see exactly where I am"*. Darian (3Y) stated that the checklist rubrics were easy to *"understand ... more detailed [than] a one line unconstructive comment"*.

Another distinctive outcome of using the checklist rubrics was that all the teachers acknowledged that their marking was now more accurate and fair for the students:

> *"It is a lot more standardised because last time when we marked, we all have our own set of ideas, what the performance standards are and what are the marks. Right now we have the checklist, we all follow it very closely and it is standardised across all classes. It is easier, you always have the checklist with you by the side so, when you grade the kids, you don't short change them. If you look at the three of us, we have very different strictness level ... so it becomes a lot more fair ... we don't give them extra marks or lesser marks"* (Xena).

In summary, from the interviews and focus group discussions, the use of the performance standards checklist rubrics seemed to be valued by both the teacher and the student participants because the rubrics appeared to have a positive impact on the

students' learning. However, the teacher participants decided to stop using the checklist rubrics after Phase Three. The lack of time to prepare the checklist rubrics was one of the reasons mentioned by Yasmin, which will be elaborated upon in the next section.

11.10 Challenges in using AfL strategies

There were several factors acknowledged by the teacher participants as to why sustaining AfL strategies would be a challenge. Yasmin said that the GCE O' level examinations played a significant role in determining what type of teaching pedagogy the teachers would use in class. She believed that teacher-talk lessons would lead the students to perform well in the GCE O' level examinations. All the teacher participants agreed that their main priority was to produce excellent academic results and doubted whether the use of AfL strategies could help them to achieve this aim. Yasmin also perceived that the teachers' teaching success would be judged by how well the students performed in the GCE O' level examinations: *"we are judged by the end product and not the process ... who cares how well you teach, what strategies you used"*.

Nevertheless, a majority of the student participants seemed to see the benefits of using AfL strategies. Despite this, many of them still appeared to be somewhat apprehensive about using these strategies. Yan (3S) said that doing peer feedback and self-regulating ones' learning was *"ok, once in a blue moon ... but the teacher teaches us is better because the teacher is there for a reason"*. Yasmin said that if she was given *"no choice"*, she would use AfL strategies in her classes because to use AfL strategies must *"either [be] a whole school effort or a national effort. It has to be coming from the upper authority. After all this is an Asian society, it is very top down"*. In addition, Yasmin doubted that any teacher could change the way they teach if they had *"seen the benefits of rote learning"*.

Xena stated that if the teacher participants had been effective in implementing AfL strategies, the *"students should buy"* the idea that using the strategies would improve their learning. Suzie stated that the duty of the teacher was to convince the students that using AfL strategies would improve their learning:

"show them that it is going to work ... you need to talk to them, persuade them, tell them the idea because they don't know as much as we do about learning and teaching. So, we are supposed to influence them".

Finally, it seemed that the teacher participants needed to invest time to plan and administer the AfL strategies lessons. Without enough time, it seemed that it would not be possible for AfL strategies to become part of the usual practices at Fairmont.

11.11 Summary and Analysis

Based on the interviews and focus group discussions, many of the teacher and student participants commented that using AfL strategies had improved the student learning process. Of the student participants who saw the benefits of using AfL strategies, most made comments that they had become more aware of what they know and do not know, that they understood the performance standards and how to reach the highest competency level, and that they been given the opportunity to articulate and test their knowledge during the peer feedback sessions. During the course of the interviews, the teacher participants had stated that because AfL strategies focused on student-centred lessons and the students' learning processes (instead of only delivering content), the student participants were more active in their learning as they took more responsibility/ ownership of their learning, which they thought had led to improvement in the students' academic results. The teacher and student participants were generally in agreement that the use of AfL strategies had changed their teaching and learning practices.

Although most of the teacher and student participants acknowledged that AfL strategies appeared to improve student learning, the use of AfL strategies were short-lived. After Phase Three, none of the teacher and student participants had continued to use AfL strategies in their teaching and learning practices. Overall, the teacher participants believed that teacher-centred teaching and learning practices could also produce good academic results without the hassle of preparing and conducting AfL strategy lessons. Some teacher participants said that the learning process was not their teaching focus. Instead, their focus was on completing the syllabus by disseminating the content from the syllabus and preparing the students for the national examinations.

Many student participants indicated that even though they had benefited from using AfL strategies, they still preferred teacher-talk as the mode of classroom instruction because the teacher's job is to teach. The most assertive student participants generally said that using AfL strategies required them to 'think', which was difficult and challenging. Sitting down and listening to the teacher's lectures was generally viewed to be the role of the students and the definition of good teaching. This strong belief in the traditional roles of the teacher and students in teaching and learning practices influenced the participants' decisions to revert to using teacher-centred learning practices, where the teacher delivers content and the students become passive recipients of knowledge.

Many teacher participants seemed to have the perception that using AfL strategies to improve learning was solely the responsibility of the students. The teacher participants seemed to associate AfL with independent learning, where the students were completely in charge of monitoring their learning progress. The majority of the student participants seemed to believe that monitoring learning progress required a two-pronged approach, where both the teacher and the students would actively monitor learning through interaction and discussion to further help the students to attain the required competency level.

Many teacher and student participants felt that the lack of time could explain why the AfL strategies were no longer used. Both the teacher and student participants felt the urgency to complete the syllabus in time, so that the students were prepared for the summative assessments. The teacher participants also described their heavy teaching workload, the large classes and other school duties as barriers to the continual use of AfL strategies in their Social Studies classes.

Overall, there was an underlying sense that the primary aim of education is to achieve good summative assessment results and that the learning process from the student perspective was not the focus of the teaching and learning practices. When providing an overall appraisal of AfL practices, the teacher and student participants seemed to be oriented more to the problems that emerged from using these strategies. In their minds, the apparent problems seemed to overshadow/ override the benefits of using AfL strategies to improve student learning that they themselves had identified.

Chapter 12 Research Findings: Phase Four & Post-Phase Four Teachers' and Students' Perceptions of Sustaining AfL Strategies

12.1 Scope of the chapter

The focus of this chapter is to provide evidence about whether the use of AfL strategies was sustained by the teacher and student participants after the researcher left in September 2011. In addition, the teacher and student participants provided reasons for using/ not using AfL strategies in their Social Studies classrooms. The participants were also asked to make recommendations for improvements of how best to sustain the use of AfL strategies in the Secondary Three Social Studies classes. In addition, the teacher participants were interviewed about their views of the benefits and challenges of professional learning during the course of the research. Finally, the final Post-Phase Four section examines the possible impact of AfL strategies on the GCE O' level Combined Humanities results.

12.2 Significance of the chapter

In order to gain an understanding of the impact of each of the AfL strategies on teaching and learning practices, sub-sections focusing on each strategy are presented in order to delineate the student and teacher participants' views of the strengths and challenges when using these strategies. The information for this section was extracted from the Phase Four lesson observation notes, samples of students' essays, and the interviews and focus group discussions, with the exception of the professional learning sub-section, where information was gathered from the Phase One, Three and Four interviews. Another important change to note is that, in 2012, Wanda was replaced by two other teachers who were not involved in the study to teach classes 3S and 3W. In 2012, Yasmin still taught class 3Y and replaced Xena as the Social Studies teacher for class 3X.

The Phase Four and Post-Phase Four research stages were important because the data collected were the teacher and student participants' perceptions of AfL strategies after September 2011. For five months (between mid-September 2011 and early March 2012), the teacher and student participants had the opportunity to reflect

on their experiences of using AfL strategies without the presence of the researcher who may have indirectly influenced the participants' views about AfL strategies. During this five month period, the participants made decisions on whether to continue using AfL strategies in their classrooms and reflected on the outcomes of the decisions that they had made.

Hence, the data presented were the consolidated viewpoints of the teacher and student participants about the benefits and challenges of using AfL strategies. Some of this information, for example the shortage of time to prepare AfL lessons and the need to cover the syllabus, may appear to be a repetition of the Phase Three data, however the information draws upon significant knowledge about how these factors actually influenced the participants' decisions to continue using AfL strategies in their classrooms. This salient information was important because it was the product of the participants' experiences of the feasibility of using/ not using AfL strategies since September 2011, from which point in time, the researcher had withdrawn from active involvement in the data collection phase of the study.

12.3 Teacher participants' views of AfL strategies

This section focuses on the teacher participants' general views about how AfL strategies had benefited the students and the challenges in adopting these strategies as part of their classroom instruction. The students' views of AfL strategies are described in detail in the sub-sections, which focus on each strategy that was used in Phase Three (e.g. self-regulated learning, peer feedback, and quality written feedback).

All the teacher participants felt that the use of AfL strategies had had a positive impact on their students' learning, particularly Xena who said that *"overall [AfL strategies] is a successful method because the results actually showed that they (students) improved"*. According to Xena, class 3X performed well on the test that they sat immediately after participating in the peer feedback activity, which she believed was evidence that using AfL strategies led to the students' more successful learning.

Wanda also believed that since AfL strategies helped her students to learn, there must be room created for these strategies to be incorporated into the existing teaching

and learning practices. She spoke of the benefits of using these strategies as *"a way we can gauge how students are learning. It's not just the end point but how they reach the end point"*. Despite the positive views about the benefits of using AfL strategies, all the teacher participants admitted that it would be difficult to sustain them. According to Wanda, *"I teach based on the way I was taught because I would think that is the norm"*. Xena said that teacher-talk lessons are *"definitely something that will stay"* because the teacher participants were more *"comfortable to stick to what they were doing"*, rather than using AfL strategies, which they had never used before. Besides, Wanda said that the students' definition of good teaching was *"frontal teaching"* and if the teacher used AfL strategies *"then they might think that you (the teacher) are not teaching them (student) properly"*.

The lack of teaching materials pertaining to AfL strategies was another issue raised by Wanda and Yasmin (also raised during the Phase Three interviews). All the teacher participants admitted that they were busy juggling their teaching responsibilities with other school duties. The teacher participants also believed that before any teaching and learning innovations could take place, it was essential that they be supported by the school, which was also mentioned by Carless (2013a) in his research. Yasmin said that the school had been *"supportive of all these innovations"* and were appreciative that the school made *"time for them to experience their learning ... like lesson observations"* (Wanda) and *"provided a platform"* (Yasmin) for professional learning, such as the protected time for them to engage in the weekly PLC sessions. The teacher participants also mentioned that the opportunity to present their PLC project at the 2011 World Association of Lesson Studies conference in Tokyo, Japan had also encouraged them to participate actively in the project.

Despite the support of the school, the use of AfL strategies in the Secondary Three Express Social Studies classrooms was short-lived. It seems that the teacher participants' personal values (in this case, their beliefs about the effectiveness of AfL strategies to improve teaching and learning practices) would be a strong determinant of the continual use of the strategies. Wanda even said that if the school *"doesn't put it (AfL strategies) as a priority, then the teachers won't see the need to apply it, unless they really believe in it"*. Hence, it appears that the teacher participants' belief in the effectiveness of AfL strategies to improve students' learning would be important for it to be sustained.

12.4 Quality written feedback: Evidence of its use, benefits, challenges and suggestions

In this section, data are presented about the use of the performance standards checklist rubrics after Phase Three. The student and teacher participants also explain the benefits they gained from using the checklist rubrics and the challenges they encountered in sustaining the use of the checklist rubrics after September 2011. Finally, the student and teacher participants made recommendations about ways to sustain the use of the performance standards checklist rubrics in teaching and learning practices.

12.4.1 Benefits

Yasmin acknowledged that the use of the performance standard checklist rubrics had provided quality written feedback for the students and assisted them with their learning. She said that the *"specific feedback"* from the checklist rubrics had helped the students to explicitly target and solve their learning problems. Xena said that the checklist rubrics were self-explanatory and that the students understood the performance standards and had produced quality work because they knew *"what they are being assessed on"*.

Natasha (3Y) commented that before the checklist rubrics were used *"on average our marks is always like 4, 5, 6, then we saw 8, 9, 11, 12 (when using the checklist rubrics), after that (checklist rubrics ceased) it became 4, 5, 6 again"*. All the 3X focus group participants commented how the checklist rubrics were better than Yasmin's *"question marks, the word 'linkage' and then underlined some stuff ... sometimes she wrote 'so', I like, so what? What is really the point there?"* (Nelly).

Natasha also said without the checklist rubrics, *"I don't understand her comments"* referring to Yasmin's *"ticks and crosses ... I don't understand why they are being placed there ... and the word 'so' and 'why' and 'ok'"*. Drew (3Y) felt that the checklist rubrics were more *"organised"* and specific in explaining the 'why' as compared to Yasmin writing 'why': *"I know I didn't write the 'why', I don't know how to write the 'why', she just writes 'why', tell me how to write the 'why'"*. All the 3S focus group participants said they *"prefer the checklist"* (Fern) because they did not understand Wanda's *'why', 'how'*. In addition, when asked whether the checklist rubrics had helped the students to understand the performance criteria, the consensus

among all the student participants was that by looking at the checklist rubrics they knew what was *"missing from the essay"* (Wade, 3X).

From the Phase Four focus group discussions, the students generally felt that the checklist rubrics had assisted them in improving their essay writing performance. These benefits were shared during the Phase Three focus group discussions. According to the participants, the rubrics were clearly organised and specific enough to help the students to identify their essay writing problems and to precisely indicate what the students needed to do to reach the highest performance standard.

12.4.2 Evidence of the use of quality written feedback after Phase Three

From the teachers' interviews, after Phase Three, the performance standards checklist rubrics were no longer used in the Secondary Three Express Social Studies classes and the 3X and 3Y classes in 2012. However, Xena said that she had used the checklist rubrics for her Secondary Four Normal Academic Social Studies classes. Yasmin said she modified the checklist rubrics and used them for her Secondary Five Normal Academic History classes. Wanda said she did not use the checklist rubrics in any of her other classes after Phase Three.

12.4.3 Challenges

Yasmin felt that the performance standards checklist rubrics would be a challenge to sustain because of the shortage of time to mark, given that she has many classes. Besides, Yasmin said that:

> *"with or without a checklist, I am one of those who write a lot of comments on their (3Y and 3X) papers. So, it really doesn't matter to me whether I use the checklist or not. It's just that the checklist makes it easier for them to see which level they are at".*

Yuna (3Y) said that Yasmin's reason of not having time to prepare and use the checklist rubrics was surprising because, so far in 2012, the 3Y class was only set one assignment. The 3Y focus groups also highlighted that most of the comments written by Yasmin in the essay assignment were the words *"'why', 'how', 'explain', 'link', 'description'",* which they generally said that they could not use as feed forward. Drew (3Y) also stated that Yasmin only gave *"ticks at random places".* Students from the 2012 3X focus group also highlighted the same problems that the 3Y class faced with Yasmin's marking. Ben (3X) and Sage (3X) said that Yasmin

wrote *"'so', 'question mark', 'linkage'"* in their essays and thus, they preferred the checklist.

In regard to Yasmin's claim that she *"write[s] a lot of comments on their papers",* an analysis of the essays mentioned by Yuna (3X students were also set the same essay question and samples were collected) was made. In total, 38 essays were collected from class 3X and 40 essays from class 3Y. Using NVivo 9, the teachers' written feedback was categorised based on the 'move analysis' (see Chapter 9 sub-section 2.2). In this analysis, the main focus was the number of discrete pieces of written feedback with two or more words being counted, since most of the marking consisted of 'ticks', 'levels', 'marks', and 'crosses'. Other than the usual, 'why', 'how' and 'so' which were countless, other written comments were limited to the following phrases (see Table 40):

Table 40 Number of Times Comments of Less than Five Words Written in 3X/3Y Essay Scripts

Comments	Number of times written for 3X / Total number of essay scripts analysed 38	Number of times written for 3Y / Total number of essay scripts analysed 40
'please check your facts'	13/38 (34.2%)	16/40 (40%)
'not answering question'	15/38 (39.5%)	8/40 (20%)
'explanation too superficial'	28/38 (73.7%)	22/40 (55%)
'need time management'	2/38 (5.3%)	3/40 (7.5%)
'poor presentation'	6/38 (15.8%)	9/40 (22.5%)
'please read up'	6/38 (15.8%)	7/40 (17.5%)
'how leads to war/ conflict'	18/38 (47.4)	23/40 (57.5%)

These comments were written once in all essay scripts that were analysed.

These findings are consistent with many of the 3Y and 3X student participants' claims that they could not use the written feedback as feed forward.

12.4.4 Suggestions

The teacher participants suggested that for quality written feedback to be used continuously, *"someone needs to churn out all these (checklist rubrics) on our behalf. Smaller classes help ... not more than 20 ... it's a world of difference when you have 40 and 45 students"* (Yasmin). The final suggestion made by Xena and Wanda, which was also mentioned in the Phase Three interviews, was to *"collaborate ... divide out the workload"*.

12.5 Peer Feedback: Evidence of its use, benefits, challenges and suggestions

This section presents data from the teacher and student participants about whether peer feedback was still used after Phase Three of the research. The student and teacher participants also explained the benefits gained from peer feedback and the challenges they encountered in sustaining the use of peer feedback after the researcher left in September 2011. A few of these benefits and challenges were also mentioned in Phase Three, which showed the importance of these factors in determining the continual use of peer feedback. Finally, the student and teacher participants made recommendations about ways to sustain the use of peer feedback in teaching and learning.

12.5.1 Benefits

The most salient benefit mentioned by the participants from the focus groups was how the students could help their peers with their learning. 13 student participants out of the 17 students in total from the Phase Four focus groups acknowledged the benefits of peer feedback. Both Levi and Wade (3X) commented that through the process of critiquing during peer feedback, they were also *"evaluating [their] own understanding"* of the content and skills. Xena acknowledged that a majority of the 3X students were able to *"give their friends good feedback"* during the second peer feedback session. She believed that the recipients of the feedback had *"gained"* as they became *"aware of their mistakes"* highlighted by their peers. When compared to the Phase Three data, in Phase Four the student participants had a greater emphasis on how they had assisted their peers in their learning instead of how much they had gained from their peers' feedback.

When the researcher asked the student participants what they had lost in terms of learning when peer feedback was no longer used in their classes in 2012, Ben (3X), Sage (3X) and Levi (3X) said that they were unable to *"know what we know and don't know"* (Ben). Julius (3W) said that participating in peer feedback in 2011 made him a more active learner where he would be *"self-driven ... to do something instead of just listening"*. Seth (3W), Darian (3Y), Natasha (3Y) and Drew (3Y) also acknowledged that through the peer feedback activity, *"there were many opportunities to see how my friends write the essays"* (Seth). There seemed to be a

consensus among the student participants that through the peer marking process, they learnt from their peers' mistakes and avoided *"repeating the same mistakes"* (Darian).

When the researcher asked the student participants what they had gained in terms of learning when peer feedback was no longer used, only Don (3S) and Sage (3X) answered this question. Don questioned the usefulness of peer feedback, particularly the ability of his peers to give good feedback. In addition, Sage said that in order to avoid confusion, the time used for peer feedback could be *"used for writing practices and quizze*s*"* to help *"refresh our memory"* on the content. As stated earlier, four student participants from 3W had nothing to say about the benefits they gained from peer feedback. Casey (3W) said whether she took part in peer feedback or not, *"I don't feel much of a difference"* about whether peer feedback had improved her learning. Besides, according to Casey, there was no essay assignment given to them or any peer feedback session conducted after Term Three.

12.5.2 Evidence of the use of peer feedback after Phase Three

All the research participants said that peer feedback was not used in 3S, 3X, 3W and 3Y Social Studies classes after Term Three. Yasmin said peer feedback was not in her 2012 teaching plan for classes 3X and 3Y because it was the *"exam year (GCE O' level examination) ... syllabus must be completed"* (3S and 3W were taught by two teachers not involved in the AfL research project in 2012).

As for Wanda, even though she no longer taught 3W, she planned to use the peer feedback lesson plans that she conducted in 2011 with her new 2012/2013 Secondary Three Express Social Studies classes. Yasmin also indicated that she would do the same. As for Xena, she planned to use peer feedback during her English Language composition exercises in 2012 with her lower secondary classes.

The student participants were also asked whether they had organised any peer feedback sessions after school. Individually, all the student participants indicated that it was impossible to have peer feedback sessions after school on their own because everyone was *"busy"* (Levi, 3X).

12.5.3 Challenges

The lack of time was mentioned by all the teacher participants (since the Phase One interviews) as one of the reasons why peer feedback was no longer used after Phase Three of the research project in 2011. All the teacher participants said that they were busy preparing for the end-of-year examinations and felt that *"the main focus was to complete the syllabus"* (Wanda). The urgency to finish the syllabus became the main priority of the teachers' teaching and learning practices. Even the 3Y students such as Darian (3Y) said it was important to *"cover the syllabus and all the skills. We must be on time cannot be delayed"*. Don (3S), Fern (3S), Nea (3S), Levi (3X), Ben (3X) and Darwin (3Y) said that peer feedback was a *"a waste of time"* and *"time consuming"*. Ben felt that *"the same time can be used to do more useful things"* instead of peer feedback. Hence, the shortage of time, which was mentioned in Phase Three was again highlighted as one of the main barriers towards the continual use of peer feedback.

However, despite the issue of the lack of time, Wanda acknowledged that peer feedback was actually *"time efficient ... we cover the skills and content ... it actually is a very useful tool to use this year"*. Xena also commented that with *"peer feedback, it actually moved things faster"* as both content and skills were taught simultaneously.

During the Phase Four interviews and focus group discussions, none of the participants highlighted the validity of peer feedback or partnering compatibility as problems that hampered the students' learning. This came as a surprise to the researcher because in Phases One and Three, the validity of the feedback given by the students, and partnering compatibility, were among the major concerns the teacher and student participants expressed. A possible explanation could be that the students were now more familiar with the peer feedback processes as they focused on the benefits that they could gain from peer feedback instead of the problems that they felt could impede their learning.

12.5.4 Suggestions

During the interviews, the teacher participants were also asked to suggest ways to ensure the continual use of peer feedback. Only one suggestion was made by Wanda

and Xena, which was to *"introduce [peer feedback] early on in the year"* (Xena) instead of in Term Three. They felt that by introducing peer feedback early, this would give the students more time to adapt to the peer feedback process. Xena also said that the teachers must *"consistently"* use peer feedback in the class so that it became *"something normal for students ... since they know what to expect"*. Yasmin did not offer any suggestions about this matter.

When the same question was asked of the student participants, only Drew (3Y) voiced her suggestion. She said peer feedback could be sustained if the activity was kept to a minimum, bearing in mind the lack of time and the need to complete the syllabus: *"maybe like two, three lessons every month, like half an hour to do peer feedback will be enough"* instead of dedicating about two hours to complete the peer feedback activity.

12.6 Self-regulated learning: Evidence of its use, benefits, challenges and suggestions

This section presents data from the teacher and student participants about the use of self-regulated learning strategies after Phase Three of the research. The participants also described the overall benefits gained from being self-regulated learners and the challenges that the teachers and students faced in sustaining the use of self-regulated learning strategies, such as setting learning goals and reflective writing, after Phase Three. Finally, the student and teacher participants made recommendations about ways to sustain the use of self-regulated learning strategies.

12.6.1 Benefits

During the Phase Four interviews, the teacher participants were asked to describe the benefits the students had gained from being more self-regulated in their learning, particularly through the setting of learning goals and using reflective writing. None of the teacher participants mentioned any benefits of self-regulated learning during the Phase Four interviews as compared to the Phase Three interviews. The same question was also asked during the Phase Four focus group discussions with students. Only Don (3S) said that through reflective writing *"at least we know what we learnt"*.

The researcher then rephrased the question and asked the students 'do you think you lose anything for not setting learning goals and reflecting on your learning?' Only the 3W student participants felt that their learning was affected, while the rest of the students, from the focus groups, individually said that without learning goals and reflective writing, their learning had not been affected. Yan (3S) stated that *"I don't feel too much of a difference when using or not using the reflection stuff because I will be just copying the slides"*. However, Wina (3W) said without setting learning goals and reflective writing, *"you can't reflect back what you have learnt ... so you won't understand what you don't know"*. In addition, Casey (3W) and Julius (3W) said that they were *"totally lost"* in class because Wanda no longer informed the students about the teaching objectives. In the Phase Three and Four focus group discussions, the student participants only highlighted the importance of informing the students about the teaching/ learning objectives, which provided clear directions during learning. After five months of not writing their learning reflections, the students voiced their opinions that reflective writing had not made any impact on their learning.

12.6.2 Evidence of the use of self-regulating learning after Phase Three

There was little evidence from the interviews and lesson observations (only classes 3X and 3Y were observed) for the use of self-regulated learning strategies such as setting learning goals and reflective writing after Phase Three. After Phase Three, only Xena and Wanda informed the students of the teaching/ learning objectives and gave the students the choice to set their own learning goals. Yasmin no longer informed the 3Y students of her teaching objectives. After Phase Three, all the teacher participants no longer asked the students to reflect on their learning using the reflection booklets.

12.6.3 Challenges

During the Phase Four interviews, the teacher participants were asked to explain why the setting of learning goals and reflective writing were no longer practiced, even though these strategies seemed to be important elements in helping students to self-regulate their learning. All the teacher participants spoke about the shortage of time as a reason why self-regulated learning strategies were abandoned (also mentioned in the Phase Three interviews).

In addition, Yasmin said that the *"classes here are too big"* and, as a result, she had *"no time to run through (informing teaching goals and reflective writing) ... teachers are overloaded with too much work and overloaded with ten thousand and one duties ... perhaps in another time, space, country"* self-regulated learning strategies would work. Yasmin felt that writing learning goals and reflective writing were *"too much work"* for both herself and her students. She further said that since 2012 was a *"key year"* where the 3X and 3Y students sat for the GCE O' level examinations, her

> *"focus is no longer in the learning process. I felt that if they have gone through once, they should now know very well on what they should actually grapple with. So, this is something that I would not carry out".*

Even her 3Y students said that the shortage of time seemed to be the main reason why AfL strategies were no longer used after Phase Three.

The students from the focus groups were also asked to describe the challenges they faced in sustaining the use of self-regulated learning practices, particularly the setting of learning goals and reflective writing. According to Natasha (3Y), even if she wanted to reflect on her learning, it became difficult because Yasmin did not inform the students of the teaching objectives. When asked about this matter, Yasmin said that she felt that there was no need to inform the students of the teaching objectives, particularly for her 3Y class, because the students were accustomed to her teaching style, which she described as *"not so structured ... flows from one place to another place"*. As for her new 3X class, which she took over from Xena in 2012, she admitted that not informing the class of the teaching objectives had not been

> *"easy for them to follow (her lesson) ... I guess it takes time for them to get use to me. I have no time to get used to them ... after all syllabus must be completed. There is no time to be wishy washy about things".*

According to Sage (3X), Yasmin's teaching objectives were *"for herself, it wasn't really told to us ... so we don't know what is going to happen"*. Natasha (3Y) said she would prefer it if Yasmin could *"lay out the [learning] path"* for her and explain what would be taught in the lessons. Natasha likened Yasmin's lessons to *"go[ing] into the classroom, as though the lights are off, whatever you get, you get, whatever you don't get, too bad"*.

After Phase Three, the teacher participants gave the students the choice of whether they wanted to use the reflection booklets or not. The 2012 3X class was told by Yasmin that it was up to them if they wanted to reflect on their learning: *"like you want to learn more, then you have your own initiatives to write it"* (Nelly, 3X). As the 2012 3X students were given the choice to write their reflections, Nelly and Ben said many students decided to just *"reflect through mentally"*. According to Wina (3W) and Nea (3S), if the teacher did not enforce the practice of reflective writing, *"it means it's (reflective writing) not that important"* (Wina) or *"the strategies are not helping students to learn"* (Nea). All the 3Y focus group students agreed with Drew (3Y) when she said that *"I think if teachers don't use it (setting learning goals and reflective writing), we will most probably don't use it ... it's like, the teacher starts to use it, the teacher recommends us, then we start to use it"*. An important point highlighted in Phase Four was that self-regulated learning is a shared responsibility between the students and the teacher and not solely the responsibility of the student.

12.6.4 Suggestions

Xena believed for self-regulated learning to work, teachers must have the *"conviction"* that it is useful in improving teaching and learning practices. Xena said that *"it is so easy to just slip back to the old ways because it's so comfortable"*. According to Casey (3W), Nelly (3X) and Levi (3X), *"forcing"* them to evaluate their learning was the only way that they would become self-regulated learners. However, Wade (3X), Sage (3X) and Julius (3W) said that forcing students to set learning goals and reflect on their learning would only cause them to *"anyhow do"* (Sage), *"not willing to do"* (Wade) and *"think of some crap to write"* (Julius). Wanda said that guiding students to self-regulate their learning could help them to *"understand [the purpose] of what the learning goal and reflections were"* - to become aware of their competency level, and to take actions to close their learning gaps.

Finally, the 3S students suggested that for self-regulated learning to be sustained, it should not only be the responsibility of the students, but also of the teachers to help the students to self-regulate their learning. These students, particularly Yan, Don and Nea, suggested that Wanda should read their reflective writings and respond to their

learning difficulties. According to Nea, she could not see any actions taken by Wanda to solve her learning problems after she wrote about them in her reflection booklet. Nea said that, in the end, *"I have to go back and study myself"* and concluded that writing her learning problems was a waste of time.

Hence, it seemed to be important that during the initial stage of using self-regulated learning strategies, teachers should actively guide and respond to the students' reflective writings. It seems that even though self-regulated learning might be seen as the students' responsibility, this does not mean that the teacher abandons their role in monitoring the students' learning progress. The findings suggest that the teachers and the students must be involved in the self-regulation of learning. All the teacher participants said that self-regulated learning involved the students independently monitoring their learning. This could be the reason why Yasmin said that once the students understood how to set the learning goals and how to reflect on their learning, that she is no longer responsible for continuing with the practice. From the student perspective, however, they also emphasised the role of the teacher.

12.7 What happened next?

In 2012, when the researcher returned to Fairmont, the school Principal decided to implement AfL strategies as a whole-of-school approach. An external trainer was engaged to provide nine hours of training for all of Fairmont's teachers. However, the Principal said that it was not compulsory for the teachers to use AfL strategies in their classrooms.

When the teacher participants were asked about whether they planned to design new AfL strategies lessons for Social Studies with the help of the trainer, Wanda, Yasmin and Xena said that the only AfL strategies lesson that they planned to conduct was the Sri Lanka peer feedback lesson they taught in 2011 with their new 2012/2013 Secondary Three Express Social Studies classes. There was no plan to use self-regulated learning strategies, such as goal setting and reflective writing, peer feedback and the performance standards checklist rubrics with the 2012 3X and 3Y classes.

Students such as Yuna (3Y) felt that because AfL strategies were not made compulsory for the teachers to use as part of their teaching practice, the teachers had

the choice of not using the strategies. Ben (3X) said that using AfL strategies was not *"a habit"* for the teachers because these strategies were something new and *"they [are] not use to it because the teachers had been teaching for so many years, always the same style, suddenly changed, very difficult for them to adapt"* (Wade, 3X). Nea (3S) felt that Wanda might feel that *"the way she teaches (teacher-talk) is better for us"*. It seemed from the student comments that as a result of reverting to teacher-centred teaching and learning, the students reverted to being more passive learners. Darian (3Y) confessed that he just *"sit and listen and sometimes, I dozed off because she is practically reading from the slides"*.

When the teacher participants were asked why they reverted to teacher-centred teaching and learning, Wanda said that *"the students are not very receptive"* to the use of AfL strategies. Xena said that she stopped using AfL strategies because *"we realised that they did very well in the test and then we take for granted that oh they know what to do"*.

12.8 Finding meaning in professional learning

In the next section, the benefits and challenges that the teacher participants faced during their professional learning journeys are described. It is important to understand the teacher participants' learning experiences because this could have impacted upon the implementation and sustainability of the AfL strategies. Data from this section were taken from the teachers' interviews in Phases One, Three and Four, where they were asked to describe what, for them, comprised effective professional learning and how effective the professional learning sessions were in helping them to understand and implement AfL strategies in their classrooms.

12.8.1 Opportunity to collaborate

Suzie felt that the weekly professional learning community (PLC) sessions had created *"more opportunities for sharing and learning"*. The PLC discussion sessions had also helped Wanda *"to learn from the other more experienced teachers"*. Xena said that she found the PLC sessions useful to *"clarify her doubts"* and to *"rectify"* the misconceptions she had about AfL strategies, which gave the teachers a *"clearer understanding of what AfL is ... like what are some of the steps that we need to do"*.

In addition, Suzie felt that since AfL was a new teaching pedagogy, with more teachers working together (instead of in isolation) to implement the strategies, they could support and encourage one another. Xena suggested that when implementing an innovation such as the use of AfL strategies, it would be useful *"if you do it in groups, the teachers can collaborate because there is a lot of planning to do beforehand. So, if we can divide out the workload, I think that will be very helpful"*. Wanda said that working collaboratively with Xena and Yasmin had encouraged her to use AfL strategies in her classes. Suzie also spoke of the importance of having someone who knew about AfL to guide the teachers during the planning and implementation stages. Xena said: *"bringing in people who have done this before, gives people a clearer sense of how to implement, what can be improved on or what we need to work on"*. Wanda also expressed the importance of having a mentor during the implementation stage, which *"makes it easier because there is somebody who is able to alleviate our problems or whatever we are not clear of, we can immediately clarify"*.

The teacher participants seemed to find the PLC sessions to be a useful platform that provided them with the time and space to collaborate and support each other, particularly during the planning and implementation of AfL strategies in the Social Studies lessons. With teacher isolation broken down, the main structural obstacles to changing instruction and student learning were also reduced.

12.8.2 Lesson observations for the teachers

In the present study, the teacher participants observed, and were observed by the other teacher participants using the lesson study format (see Chapter 6, sub-section 5). This was followed by feedback discussions and reflection on how AfL strategies had helped the students with their learning.

Wanda and Xena felt that the lesson observation sessions were the most useful learning experience that they had undertaken throughout the professional learning sessions. Xena mentioned that the teachers were told by the school leaders to change their teaching and learning practices and not to *"stick to the traditional way of thinking, be more innovative, try to make lessons more interesting"*. According to Xena, simply instructing the teachers to change their teaching style would not work because *"how am I supposed to make my lesson more interesting? What do you*

mean by don't stick to the traditional way of teaching?" However, she found that the lesson observations gave her a clearer idea about how best to use AfL strategies in her Social Studies classroom. She also said that she had *"adapted some useful methods"* that were used by the other teacher participants in her 3X Social Studies class.

As a beginning teacher, Wanda spoke about how the lesson observations were useful because she could *"see it (AfL strategies) in action"* instead of being overloaded with *"the theoretical underpinnings"*:

> *"... we are doing this for the first time, so we see how each of us tries to disseminate the information, steps that we can learn. For example, Yasmin printed the performance standards, which I did for the second round [of peer feedback] ... for Xena, it would be the learning goals. Yeah, I would actually give the learning goals at the very beginning to see whether they (students) want to adapt it or not".*

Other than observing the teacher participants using AfL strategies, according to Wanda, the feedback she received from the post-observation discussions made her aware of *"how she teaches ... and could improve her teaching ... because when you teach you cannot observe your own teaching"*.

It seemed that Xena and Wanda were the only teacher participants who identified positive gains from the lesson observations. In contrast, Yasmin did not give any response when asked how the professional learning sessions had helped her throughout the course of implementing AfL strategies in her class.

12.8.3 Finding time and commitment

Among the challenges the teacher participants faced were to find the time to participate in the learning workshops, notwithstanding having a positive attitude such as a *"willingness to learn"* (Yasmin) on the part of the teacher participants. All the teacher participants commented on how they were busy with a range of after-school activities and hence, the only time available to conduct the learning workshops was on Saturdays.

Even though the workshops were conducted on a Saturday, Yasmin was still involved with her co-curricular activity on that day. Often she would leave the workshop session for 15 minutes at a time and would miss important discussions or

decisions made by the other teacher participants about the implementation of the AfL strategies. Commenting on this situation, Xena said that the teacher participants must be *"committed"*, focused and open to new learning: *"if you feel that you have learnt all that can be learnt, like my method is the best, then no matter how many courses you go, it won't help"*. She said that if the teachers felt that they were forced into learning something that they found irrelevant to improve their teaching and learning practices, this would not sustain the use of the new teaching pedagogy for long. She further explained that whether AfL strategies could be sustained would *"depend on your attitude, I mean how much you want to implement and all (sustain), depend on you"*.

Another challenge faced by the teacher participants was that the PLC sessions were still not exclusively devoted to professional development activities. Xena said that it was frustrating not to get the full hour for the PLC session:

> *"I find that during PLC time, we are supposed to have an hour from 7.20 to 8.20, but the first half hour of the time is usually taken up for briefing, announcements and agenda. By the time you really see each other, it is 7.45, 7.50, so you are left with 20 to 30 minutes to do a discussion. By the time you get into the topic, the bell rang and you have to go to class. So, not much time to play around with and it is almost impossible to come together after that"*.

According to Xena, if the teacher participants managed to have the full-hour PLC session, Yasmin would either be late because she was occupied with other school duties which Yasmin considered to be far more important than participating in the PLC session. As a result, this seemed to cause tension between Yasmin and the two other teacher participants, particularly Xena who questioned Yasmin's *"lack of commitment"* towards the PLC sessions and the research project. The consequence of Yasmin's absence was that decisions were made without her agreement. Xena felt frustrated because valuable PLC time was wasted as either Wanda or herself needed to explain to Yasmin why decisions were made about the implementation of the AfL strategies.

12.8.4 Concluding remarks

Even though the professional learning sessions seemed to be useful in helping the teacher participants to implement AfL strategies in their respective classes, the use of AfL strategies in the Secondary Three Express Social Studies classes was not

sustained. The teacher participants recognised the benefits of working 'smarter and not harder' through collaboration and participation in professional learning. However, they were not able to continue working with their current PLC learning team in 2012. According to the Xena and Wanda, due to the school's needs, they were placed in the English Department PLC learning team, while Yasmin was in the Humanities Department PLC learning team. Both of these learning teams were involved in other projects which were not related to AfL strategies. Since, the PLC sessions were the only time available for the teachers to discuss AfL strategies, now that it had been taken away, the teacher participants said that they could not find the time to continue discussing and using AfL strategies in their Social Studies classes. Thus, the lack of available time and opportunities seemed to be key difficulties for sustaining AfL strategies in the classroom.

12.9 Post-Phase Four: GCE O' level results

In the Post-Phase Four stage, the researcher examined Fairmont's GCE O' level Combined Humanities results from 2010 to 2012 to examine the relationship between peer feedback participation ratings and the student participants' summative results. The data used in the analysis were (a) peer feedback participation ratings; (b) GCE O' level Combined Humanities grades; (c) Common Test results (taken before and after the invention); (d) the peer feedback essay results; and (e) the reflection booklet scores. The main analyses used correlations and regressions to examine the contribution of peer feedback participation ratings to the GCE O' level Combined Humanities grades after taking account the Common Test results and essay performance.

12.9.1 2010-2012 GCE O' level Combined Humanities results

As a first step in examining the GCE O' level Combined Humanities results, an exploratory analysis was conducted on the 2010 to 2012 quality of passes. The mean subject grade (MSG) was analysed to determine whether the student participants who carried out AfL strategies, particularly peer feedback, received better marks in the GCE O' level Combined Humanities results compared to the previous cohorts who were taught using teacher-centred strategies.

The MSG was used because it gives a better representation of the quality of passes instead of percentage passes. MSG is calculated by adding the GCE O' level

grades attained by the students who sat for a particular subject. For example, A1 was assigned '1' down to F9 which was assigned '9'. These combined grades are then divided by the number of students that sat for the subject in the GCE O' level examinations (see Table 41). For example, seven students sat for the GCE O' level examinations for the subject Art. The seven students' grades were added and divided into seven, which gave an MSG of 4.7. The smaller the MSG means the better the students had performed in the GCE O' level examinations for the subject. In addition, percentage passes refers to the proportion of students who obtained grades A1 to C6, while the percentage distinction refers to the proportion of students who obtained grades A1 and A2 only.

Table 41 Computation of MSG

Student	GCE O' level grades	Computation of MSG
Student A	C5	
Student B	D7	$5 + 7 + 1 + 3 + 2 + 9 + 6 = 33 \div 7 =$
Student C	A1	4.7 (MSG)
Student D	B3	
Student E	A2	
Student F	F9	
Student G	C6	

As mentioned in Chapter 3 sub-section 4.3, the subject Combined Humanities comprises two subjects: Social Studies, which made up 50% of the total Combined Humanities grade, and either one of the Elective Humanities subjects - History, Geography or Literature, which made up the other 50% of the Combined Humanities grade. Hence, the Combined Humanities GCE O' level grade is a combination of Social Studies and one of the Elective Humanities subjects. Thus, any interpretations, particularly any improvements in the GCE O' level Combined Humanities grades must take into account that half of these grades are from Social Studies, which means that students could do fairly well in their Elective subject and fail Social Studies but still be given a pass in their Combined Humanities grade.

From 2010 to 2012, the GCE O' level results for Combined Humanities showed a progressive improvement (see Table 42). In 2010, the school's percentage pass rate was 94.6% compared to the national percentage pass rate of 88.8%. However, the school's percentage distinction rate was 30.3%, which was lower than the national percentage distinction rate of 33.8%. In 2011, Fairmont's Combined Humanities percentage pass rate dipped slightly to 88.9% compared to the national percentage

pass rate of 89.3%. The percentage distinction rate achieved was 27.14% for the school compared to a 35.1% distinction rate at the national level. In 2012, an increase in both the percentage pass rate and the percentage distinction rate for the subject Combined Humanities were recorded at Fairmont. The school achieved a 96.4% pass rate compared to the national percentage pass rate of 89.3%. The 2012 cohort (which consisted of all the student participants in the present study) performed well to obtain a 48.8% distinction rate compared to the national percentage distinction rate of 34.85%.

In addition, the MSG was used as an indicator to gauge the quality of each cohort's performance and to investigate the possible effect of AfL strategies on the school's high stake Combined Humanities GCE O' level results.

In 2010, the Combined Humanities' MSG was 3.6 (see Table 42), increasing to 3.8 in 2011. However, in 2012, the MSG decreased by almost a grade to 2.9. In comparison to the other subjects such as Design and Technology, Chinese Language, Biology and Chemistry, even though the MSG improved from 2011 to 2012, the improvement was less than a grade compared to the Combined Humanities subject. A possible explanation for this improvement could be that the quality of the 2012 cohort was better overall compared to previous years. In order to determine the quality of the 2010 to 2012 cohorts, the mean scores from the Primary School Leaving Examinations (PSLE) (used by the school to determine the cohort's academic quality and admission to the school) were obtained from Fairmont. Overall, the 2012 cohort had a slightly better mean score than the previous cohorts, which meant that the 2012 cohort was marginally better overall (see Table 43).

Table 42 Fairmont's 2010-2012 GCE O' Level Results

Subject	Year of Exam	No. of candidates	% Passes		% Distinction		School's MSG
			School	National	School	National	
English Language	2010	185	95.1	93.3	9.2	23.9	4.2
	2011	200	93.0	93.8	7.0	24.4	4.3
	2012	167	91.0	93.6	12.0	23.6	4.5
Malay	2010	23	95.7	98.5	21.7	33.1	3.7
	2011	19	100.0	99.3	21.1	33.3	3.4
	2012	24	100.0	99.4	29.2	36.2	3.0
Chinese	2010	128	98.4	97.2	30.5	33.2	3.1
	2011	146	99.3	97.7	37.0	32.7	3.0
	2012	112	100.0	97.5	33.0	31.4	2.8
Combined Humanities	2010	185	94.6	88.8	30.3	33.8	3.6
	2011	199	88.9	89.3	27.1	35.1	3.8
	2012	166	96.4	89.3	48.8	34.9	2.9

Subject	Year of Exam	No. of candidates	% Passes		% Distinction		School's MSG
			School	National	School	National	
Maths	2010	185	96.2	94.9	44.3	58.8	2.9
	2011	200	97.0	95.0	44.0	58.1	2.8
	2012	167	92.2	94.6	51.5	57.8	2.9
Additional Maths	2010	79	100.0	96.4	60.8	53.5	2.4
	2011	94	98.9	96.3	56.4	53.4	2.4
	2012	100	100.0	96.4	42.0	52.8	2.6
Physics	2010	56	100.0	97.8	19.6	46.1	3.4
	2011	59	98.3	97.6	20.3	44.7	3.3
	2012	69	98.6	97.7	20.3	45.2	3.6
Chemistry	2010	60	100.0	96.2	31.7	44.6	3.0
	2011	59	100.0	96.2	23.7	44.0	3.0
	2012	69	100.0	96.6	29.0	43.8	2.8
Biology	2010	30	100.0	92.4	26.7	48.0	3.4
	2011	36	94.4	94.3	22.2	47.3	3.5
	2012	23	94.8	94.8	8.7	47.6	3.2
Science Phy/Chem	2010	125	96.8	87.4	50.4	37.9	2.8
	2011	141	94.3	85.9	43.3	33.4	3.1
	2012	98	84.7	86.0	27.6	34.5	3.7
Design and Tech	2010	16	93.8	79.1	18.8	15.3	3.8
	2011	25	80.0	79.4	4.0	17.1	5.1
	2012	24	75.0	80.1	8.3	18.4	4.7
Principles of Accounts	2010	72	98.6	80.1	48.6	21.3	2.7
	2011	96	93.8	80.6	33.3	20.3	3.2
	2012	57	73.7	80.5	26.3	20.1	4.1
Economics	2010	45	93.3	97.9	22.2	42.5	3.7
	2011	81	93.8	97.9	12.3	47.7	3.9
	2012	75	93.3	97.6	30.7	44.0	3.5
Literature in English	2010	25	80.0	95.5	16.0	36.3	4.5
	2011	20	100.0	97.0	5.0	41.9	3.8
	2012	10	100.0	95.8	30.0	43.3	2.8

Table 43 PSLE Mean Score for 2010-2012 Cohorts

Cohort	Mean	Median
2010	215	213
2011	215	213
2012	218	217

From the exploratory analysis of the GCE O' level Combined Humanities results from 2010 to 2012, it seems that the 2012 cohort may have performed better than previous cohorts. It needs to be recognised that in 2012 other subjects also seemed to have better results, although not to the same extent as Combined Humanities. It also needs to be remembered that Social Studies is only half of the Combined Humanities (Social Studies 50% + Elective subject 50%). In addition, the number of students in the 2012 cohort was smaller (166) compared to the two previous cohorts (2011/199 and 2010/185). Nevertheless, there appeared to be a possibility that the 2012 cohort performed better on the GCE O' level Combined Humanities than did previous years,

and that this may have been related in some way to the intervention conducted for the present study.

12.9.2 Correlation analysis: Peer feedback participation ratings, peer feedback essay performance scores, Common Test results and the GCE O' level Combined Humanities results

The next part of the quantitative analysis was conducted to examine whether the peer feedback participation scores, the essay performance scores, and the Common Test (CT1) scores may be related to the GCE O' level Combined Humanities results in 2012. The CT1 scores were collected in February 2011 before the students participated in the AfL strategies. All the student participants sat for the Common Test papers for all subjects, with the duration and format of the Common Test papers being half of the GCE O' level examinations.

The peer feedback participation ratings consisted of marks awarded by the teacher observers to indicate the students' participation levels (see Chapter 7 sub-section 4.3.1 for the student's peer feedback participation ratings). After the peer feedback activity, the students were given approximately one hour to revise their essays based on the feedback given by their peers in the next Social Studies lesson. These essays were then submitted for marking to the teacher (see Chapter 7 sub-section 4.3.2 for the marks from the peer feedback assignment. Also, see Chapter 9 sub-section 4.2 for the procedure of the analysis). Hence, the essay assignment performance scores could possibly indicate whether the students had taken into consideration their peers' feedback during the revision process for the essays.

The first step was to test whether the GCE O' level Combined Humanities results co-varied with the students' peer feedback participation ratings, peer feedback essay performance scores and CT1 results, therefore the Pearson correlation coefficients were calculated. The correlations showed that students' participation ratings during the peer feedback activities and the GCE O' level Combined Humanities results were significantly positively correlated, $r = .81$, $N = 161$, $p < .0001$ (see Table 44). Performance in the peer feedback essay assignments had a positive relationship with the GCE O' level Combined Humanities results, $r = .24$, $N = 161$, $p < .01$. Also, the CT1 results had a positive relationship with the GCE O' level Combined Humanities results, $r = .26$, $N = 161$, $p < .01$. The participation rating during the peer feedback process was only marginally related to the essay performance ($r = .17$).

Table 44 Pearson Correlation Coefficient Analysis of Peer Feedback Participation Ratings and Peer Feedback Essay Performance Scores on the GCE O' Level Combined Humanities Results

		O level results	Common Test results	PF essay performance scores	PF participation ratings
O level results	Pearson Correlation	1	.26[**]	.24[**]	.81[**]
	Sig. (2-tailed)		.001	.003	.000
	N	161	161	161	161
CT1results	Pearson Correlation	.26[**]	1	.13	.26[**]
	Sig. (2-tailed)	.001		.10	.001
	N	161	161	161	161
PF essay performance scores	Pearson Correlation	.24[**]	.13	1	.19[*]
	Sig. (2-tailed)	.003	.10		.02
	N	161	161	161	161
PF participation ratings	Pearson Correlation	.81[**]	.26[**]	.17	1
	Sig. (2-tailed)	.000	.001	.02	
	N	161	161	161	161

[**]. Correlation is significant at the 0.01 level (2-tailed).

From the correlational analysis, it seems that failure to perform in the peer feedback essay assignment did not appear to necessarily lead to poor GCE O' level Combined Humanities grades. Intriguingly, participation in peer feedback correlated more with the GCE O' level Combined Humanities results than with doing well in the AfL essay assignments. However, performance scores for the essay about which feedback had been given were not related to the participation ratings for the peer feedback activities.

12.9.3 Hierarchical multiple regression (Part 1)

Hierarchical multiple regression was used to further examine the prediction of the GCE O' level Combined Humanities results, from peer feedback participation, peer feedback essay performance scores and the February 2011 CT1 results. Before the hierarchical multiple regression was conducted, the Durbin-Watson test was first undertaken. The Durbin-Watson result showed that there was independence of residuals of 1.25. According to Tabachnick & Fidell (2001), the reciprocal of tolerance value was more than 0.1, which indicated that there was no problem with collinearity. There was only one outlier (residual of 2.51) when the standardised residual was set at ±2.5. However, this case remained in the calculation because the residual increase was minimal. Based on the Cook's Distance there were no values

above '1' (Cook & Weisberg, 1982) that may have been influential. The P-P Plot showed that the residuals were normally distributed. Hence, the assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met.

A two-step hierarchical multiple regression was then conducted with the GCE O' level Combined Humanities results as the dependent variable. In the first step of the hierarchical multiple regression, two predictors were entered: the CT1 results and the peer feedback essay performance scores. This model was statistically significant $F(2, 158) = 9.71$; $p < .001$ and explained 10.9 % of variance in GCE O' level Combined Humanities results (Table 45). After entry of the peer feedback participation ratings at Step 2, the total variance explained by the model as a whole was 65.7% ($F(3, 157) = 100.27\%$; $p < .001$). The introduction of peer feedback participation ratings explained an additional 55% of variance in the GCE O' level Combined Humanities results, after controlling for Common Test results and peer feedback essay performance scores (R^2 Change = .55; $F(1, 157) = 250.70$; $p < .001$).

With reference to the betas in Table 45, the Common Test results and the peer feedback essay performance scores did not make a significant contribution ($p > .01$) in the final model. The best predictor of the GCE O' level Combined Humanities results was peer feedback participation ($\beta = .78$, $p < .001$). The model predicts that if peer feedback participation ratings increase by one standard deviation (which is 1.36 from Table 46), the GCE O' level Combined Humanities grades would be likely to increase by .78 standard deviation units.

Table 45 Hierarchical Regression Model of GCE O' Level Combined Humanities Results.

	R	R2	R^2Change	B	SE	β	t
Step 1	.33	.11**					
CT1 results				.23	.06	.23*	3.09
PF essay performance scores				.21	.05	.21*	2.71
Step 2	.81	.66**	.45**				
CT1 results				.04	.04	.05	.92
PF essay performance scores				.05	.03	.09	1.80
PF participation ratings				.98	.06	.78**	15.83
Note: Statistical significance: *p < .01 ,* *p < .001							

Table 46 Mean and Standard Deviation of GCE O' Level Combined Humanities Results

	Mean	Std. Deviation	N
GCE O' level results	2.84	1.71	161
CT1 results	4.43	2.08	161
PF essay performance scores	6.04	2.89	161
PF participation ratings	3.34	1.36	161

In general, the students who participated actively during the peer feedback sessions appeared to have a higher chance of gaining a distinction in the GCE O' level Combined Humanities. Performing or underperforming in the peer feedback essay assignments had less of an effect on whether the students scored a distinction in the GCE O' level Combined Humanities.

Upon closer examination, the 80 students who attained distinctions in their GCE O' level Combined Humanities were all given either 'excellent or 'good' for their peer feedback participation. In contrast, of the 30 students who received either a C5, C6 or D7, 27 received a rating of 'fair' or 'average', while three students were given a 'good' rating for their peer feedback participation. In general, therefore, the students who participated actively during the peer feedback sessions, regardless of whether they performed or underperformed in their essay assignments, still fared very well in their GCE O' level Combined Humanities results. In contrast, students who were not actively engaged during the peer feedback activities appeared to have a higher possibility of getting a C5, C6 or D7 in their GCE O' level Combined Humanities examination.

12.9.4 Correlation analysis: Peer feedback participation ratings, peer feedback essay performance scores, Common Test 2 results and the reflective writing scores

To examine whether the second Common Test (CT2) results co-vary with the students' peer feedback participation ratings, peer feedback essay performance scores, the first Common Test (CT1) and the students' reflective writing scores, Pearson correlation coefficients were calculated.

The correlations showed that the students' participation ratings during the peer feedback activities and the CT2 results were not significantly correlated (see Table 47). Performance in the peer feedback essay assignments had a significant positive

relationship with the CT2 results, $r = .35$, $N = 161$, $p < .01$. Also, the CT1 results had a positive relationship with the CT2 results, $r = .21$, $N = 161$, $p < .01$. Finally, the students' reflective writing scores had a significant negative correlation with the CT2 results, $r = .25$, $N = 161$, $p < .01$ (better reflections were associated with better CT2 results).

Table 47 Pearson Correlation Coefficient Results for Peer Feedback Participation Ratings, Peer Feedback Essay Performance Scores, Common Test 1 Result, Reflective Writing Scores and the Common Test 2 Results

		CT1 results	CT2 results	PF assignment scores	PF participation ratings	Reflective writing scores
CT1 results	Pearson Correlation	1	.21**	.12	.31**	-.03
	Sig. (2-tailed)		.01	.13	.000	.71
	N	161	161	161	161	161
CT2 results	Pearson Correlation	.21**	1	.35**	.152	-.25**
	Sig. (2-tailed)	.01		.000	.05	.001
	N	161	161	161	161	161
PF assignment scores	Pearson Correlation	.12	.35**	1	.19*	-.35**
	Sig. (2-tailed)	.13	.00		.02	.000
	N	161	161	161	161	161
PF participation ratings	Pearson Correlation	.31**	.15	.19*	1	-.06
	Sig. (2-tailed)	.000	.05	.02		.46
	N	161	161	161	161	161
Reflective writing scores	Pearson Correlation	.03	-.25**	-.35**	-.06	1
	Sig. (2-tailed)	.71	.001	.000	.46	
	N	161	161	161	161	161

**. Correlation is significant at the 0.01 level (2-tailed).

From the correlational analysis, it appears that participation in peer feedback did not appear to be related to the CT2 results. The CT1 results, the peer feedback assignment scores, and the reflective writing scores correlated more closely with the CT2 results.

12.9.5 Hierarchical multiple regression analysis (Part 2)

A two-step hierarchical multiple regression was conducted with the second Common Test (CT2) results as the dependent variable. In the first step of the hierarchical multiple regression, two predictors were entered in a block: the first CT1 results and the peer feedback essay performance scores. In the second step, the peer feedback participation ratings and the students' reflective writing scores were entered.

In the first step of the hierarchical multiple regression, the model was statistically significant $F(2, 158) = 14.10$; $p < .001$ and explained 15.1% of the variance in the CT2 results (Table 48). After entry of the peer feedback participation ratings and the reflective writing scores at Step 2, there was no significant change to $R2$. The regression shows that only the peer feedback assignment scores had a strong effect on the CT2 results. Peer feedback participation had a small effect on peer feedback assignments and the CT2 results.

Table 48 Hierarchical Regression Model of Common Test 2 result

	R	R2	R^2Change	B	SE	β	t
Step 1	.39	.15					
CT 1 results				.18	.08	.17	2.28
PF essay performance scores				.27	.06	.33**	4.49
Step 2	.42	.17	.02				
CT 1 results				.17	.08	.16	2.05
PF essay performance scores				.22	.06	.27**	3.46
PF participation ratings				.08 -.19	.13	.05	.58
Reflection scores					.10	-.15	-1.90

Note: Statistical significance: *p < .01 , * *p < .001*

12.10 Summary and analysis

In summary, even though there was evidence that the use of AfL strategies had benefited the students through an improved learning process; increased motivation; more self-regulated learning; understanding the language of assessment etcetera, the main practices of AfL were discontinued by both the teachers and the students.

From the Phase Four interviews and the focus group discussions, external factors such as shortage of time and the pressure to complete the syllabus appeared to influence the teachers' decision to abandon the use of AfL strategies. This lack of commitment and conviction seemed to arise from uncertainty about the effectiveness of AfL strategies to produce summative results, and appears to have led the participants to resist the changes to their teaching and learning practices. Potential problems associated with using AfL strategies seemed to take centre stage in deciding the continual use of the strategies. These potential problems were expressed prior to the intervention and, despite evidence from the intervention about the benefits of the AfL strategies, beliefs about the potential problems were retained.

12.11 Concluding remarks

A summary of the main findings from Phases One, Three and Four, as well as the post-Phase Four is presented in Table 49. The findings from Phase One described the current assessment and feedback beliefs and practices at Fairmont. The findings from Phase Three depicted the outcomes of the intervention: changes in the teacher's teaching and students' learning beliefs, attitudes and behaviours; evidence of students becoming more self-regulated in their learning; and factors that contributed to the improvements in teaching and learning practices. The findings from Phase Four described the challenges to sustaining AfL strategies and covered suggestions about how to sustain AfL such as through the use of professional learning. This was followed by the findings from Post-Phase Four where an analysis was undertaken of the links between the GCE O' level Combined Humanities results, participation ratings from the peer feedback sessions, essay performance, reflection booklet scores and Common Test results. The best predictor of the GCE O' level results for Combined Humanities was the participation ratings from the peer feedback sessions.

Table 49 Summary of Phases One, Three, Four, Post-phase Four Findings

PHASE ONE Existing teaching & learning practices & perceptions of AfL (beliefs, attitudes & behaviours)				
Features	Teacher	Student	Teacher	Student
	Benefits		Concerns/Problems/Challenges	
Existing teaching & learning practices, beliefs, attitudes & behaviours Traditional instruction - assessment model	Content dissemination that covered the textbook/syllabus (I, FGD) PowerPoint slides assisted teacher in disseminating content & helping students to focus (I, FGD) Fulfilling the aims of education – to produce good summative results (I, FGD)		No pre-assessment of current knowledge by teacher & students (I, FGD) Limited to lecture style (didactic) teaching & replicating content from textbook - passive learning (I, FGD) Limited number of assignments (I, FGD)	
	Not restricted by teaching/ learning objectives (I)	Listen & take notes (FGD)		Unaware of teaching objectives & outcomes (FGD)
Lesson preparation	Shorter time needed to prepare lesson – easy (1)	No pre-learning/ preparation needed before lesson (FGD)		
Monitoring learning	Verbal questioning to the whole class (I)		Unable to monitor learning progress (I, FGD)	
Syllabus/ Scheme of Work	Syllabus covered on time for summative assessments – felt secure (I, FGD)		Syllabus/Scheme of Work dictated teaching pace & not learning progress (I, FGD)	
Summative assessments	Grades summarised learning achievement – determined future well-being, increased motivation, morale & pride (I, FGD) Maximum effort invested before summative assessments – drill & practice (I, FGD) Easy to understand/explain to parents students' success/failure in learning (I, FGD)		Grades – not a useful mechanism to evaluate & identify teaching/learning problems (I, FGD) Teaching to the test – led to rote learning, spoon feeding (I, FGD) Only marks used by parents as indicator of learning success (I, FGD)	
Teacher's role in teaching	Taking charge of the teaching & learning direction (I, FGD)		Teacher's role limited to content disseminator (I, FGD)	

	Teacher responsible for ensuring learning & students' performance (I, FGD)	Responsibility to teach/learn/perform in the hands of the teacher (I, FGD)
Student's role in learning	Listen to the teacher's lesson/s – copy notes (I, FGD) Controlled/orderly classroom behaviour (I, FGD)	Passive learners – lacking in ownership & responsibility for learning (I, FGD)
Written feedback	Marks as written feedback used to indicate learning progress/ success/ failure (I, FGD)	Many scripts to mark/shortage of time undermined timeliness/quality of written feedback (I, FGD) General/vague written feedback unable to be used as feed forward (I, FGD)
General perception of AfL strategies		Lack of understanding about the functions of AfL strategies & outcomes of using AfL (I, FGD) Doubted AfL effectiveness to improve teaching & learning/GCE O' level results (summative assessments proven to produce good results) (I, FGD) Difficult to change teaching & learning practices/habits/mentality (I, FGD) Questioned the need to change from teacher-centred to student-centred teaching/learning (I, FGD)
Perception of readiness to use AfL strategies	Willingness to try AfL strategies (I, FGD)	Doubted capacity/ability to use AfL strategies (I, FGD) Students' lack of responsibility & ownership of learning (I, FGD)
Perception of school support to encourage use of AfL strategies	Teachers' supported by school to start any innovative pedagogy such as AfL (I, FGD)	Too many initiatives/priorities (I, FGD) Finding time for AfL training/learning (I, FGD) Lack of AfL teaching materials (teachers) (I, FGD) If teachers are empowered to teach based on students' learning progress this might disrupt the syllabus (I, FGD) School/Dept's emphasis of producing good GCE O' level results (I, FGD)
Perception of peer	Provides an opportunity to articulate learning (I, FGD)	No experience in using peer feedback (I, FGD)

feedback				
	Provides an opportunity to monitor own/students' learning (I, FGD) Learning through interactions /peer assistance (I, FGD) Feedback readily available & timely (I, FGD)		Validity of feedback – lack of trust in own/students' ability to give quality feedback – preference for teacher's feedback (I, FGD) Takes too much curriculum time (I, FGD) Fear of lagging behind in completing syllabus/preparing for summative tests (I, FGD) Group members compatibility & credibility (I, FGD) Students might not take peer feedback seriously (I, FGD)	
Perception of self-regulated learning	Could increase focus on what to learn (I, FGD) Could be more aware of learning problems (I, FGD) Could increase motivation to achieve learning goals (I, FGD)		School policy about using target setting/test marks to monitor learning (I, FGD) Doubted effectiveness of setting learning goals & reflective writing to improve learning (I, FGD) Lack of knowledge about how to be self-regulated learners (I, FGD)	
Perception of quality written feedback	Written feedback could be used as feed forward (I, FGD) Could increase understanding of performance standards (I, FGD)		Students insisting on marks & ignoring feedback (I) Shortage of time/many scripts to mark (I)	Marks – better indicator of achievements than written feedback (FGD)
PHASE THREE **Outcomes of implementing AfL (beliefs, attitudes & behaviours)**				
Factor	**Teacher**	**Student**	**Teacher**	**Student**
	Positive Outcomes		**Difficulties/Limitations**	
Teaching & learning practices	More learning with understanding instead of rote learning (I, FGD) Students more motivated to learn (I, FGD) Evidence of improved student learning (I, FGD)		Good GCE O' level results the main priority in teaching & learning & not learning process (I, FGD) GCE O' level results used to judge teaching & learning success & not effective learning process (I, FGD)	

	Sharing teaching & learning responsibilities (I)	Preferred student-centred learning (FGD)	Balancing AfL & summative assessments (I)	Forced to do AfL strategies (FGD)
Outcomes of using self-regulated learning through setting learning goals & reflective writing	More focused teaching & learning (I, FGD) Time allocated to reflect on learning (I, FGD) Increased motivation to learn (I, FGD) Provided feedback on teaching (I, FGD) Students more accountable for learning (I, FGD) Opportunity to inform/be informed of learning progress/struggles/what know & do not know (I, FGD)		Do not know how to effectively monitor/reflect on learning, shortage of time & demand to complete syllabus – no time given for reflective writing, teacher not reading students' reflective writings (I, FGD) Teacher perceived as abandoning teaching responsibility (I, FGD) No effort to self-regulate learning - no impact on learning (I, FGD) Effective learning process not the aim of teaching & learning but performing well in the GCE O' level (I, FGD)	
Outcomes of using peer feedback	Timely feedback (I, FGD) Easier to understand peers' feedback (I, FGD) More practice/opportunity to assess/reassess content & skills – reinforced learning (I, FGD) Feed forward (I, FGD) Active role in monitoring learning (I, FGD) Understood language of assessment – performance standards/marking process (I, FGD)		Failed to cover the syllabus on time (I, FGD) Doubted ability of self/peers in giving feedback (I, FGD) Validity of feedback - lacking in constructive feedback, conflicting feedback from teacher & peers (I, FGD) Issues of same ability groupings versus mixed-ability groupings (I, FGD) Students not taking peer feedback seriously – waste of time (I, FGD)	
	Helped cover content & skills (I) Teacher marked faster (I)	Helped interactive learning (FGD)		Uncomfortable, troublesome (FGD) Teacher's job to mark & give feedback (FGD)
Outcomes of quality written	Students could understand better the performance standards (I, FGD)		Time needed to prepare & use checklist rubrics during marking	

feedback using performance standards checklist rubrics	Students could identify their competency level & take actions to close learning gaps to achieve a higher level (I, FGD) Detailed & specific to be used as feed forward (I, FGD)		There are too many scripts to mark (I)	
	Accurate & fair marking			

PHASE FOUR **Sustaining the use of AfL (beliefs, attitudes & behaviours)**				
Factor	**Teacher**	**Student**	**Teacher**	**Student**
	Consequences of not using AfL		**Reasons for not using AfL strategies**	
AfL as teaching & learning strategies	Reverted to teacher-talk lessons – passive learners (I, FGD) Learning progress no longer the centre of teaching & learning practices (I, FGD)		Teach/learn based on how taught/learnt – AfL not a teaching & learning culture (I, FGD) More comfortable with teacher-centred than student-centred teaching & learning (I, FGD)	
			Shortage of time – to prepare for AfL lesson/materials (I)	AfL wasting curriculum time (FGD)
Peer feedback	Not able to tap into peers' knowledge & assistance (I, FGD) No opportunity to learn from viewing different essays (I, FGD)		Shortage of time to prepare peer feedback lessons (I, FGD) Goes against the priority to cover the syllabus – prepare for summative assessment/ GCE O' level (I, FGD) Validity of feedback could be questioned (I, FGD)	
				No difference in learning (FGD)
Self-regulated learning through setting learning goals & reflective writing	Unable to understand 'what students know & do not know' (I, FGD) No time given to reflect/monitor/evaluate learning (not structured into lessons) (I, FGD) Teaching objectives exclusively for teachers (I, FGD)		Shortage of time to read students' reflections (I, FGD) Too late to take up self-regulated learning – not a culture/habit (I, FGD) If students are given the choice they prefer not to set learning goals and reflect on their learning (I, FGD)	
		Disorganised lesson lacking in focus (FGD)		No action taken by teacher to rectify identified learning gaps (FGD)
Quality written feedback using	Unable to identify current competency level & taking action to close learning gaps (I, FGD)		Homework policy to return assignments quickly (I)	Teacher too busy to prepare checklist rubrics (FGD)

| performance standards checklist rubrics | | General/vague feedback that could not be used as feed forward (FGD) | Shortage of time to prepare & use rubrics - too many scripts (I) | |

POST-PHASE FOUR
Possible impact of peer feedback on GCE O' level Combined Humanities results

Features	Positive Outcomes	Factors contributing to MSG in 2012
GCE O' level Combined Humanities results	Better MSG in 2012 by almost one grade	Participation in peer feedback correlated more with the GCE O' level Combined Humanities final exam results than doing well in the AfL essay.
		Failure to perform in the peer feedback essays did not appear to necessarily lead to poor GCE O' level Combined Humanities grades.
		Performance on the essay about which feedback had been given was not related to the participation ratings for the peer feedback activities.
		Students who participated actively during the peer feedback sessions appeared to have a higher chance of getting a distinction in the GCE O' level Combined Humanities.
		Performing or underperforming in the peer feedback essay assignments has less of an effect on whether students scored a distinction in the GCE O' level Combined Humanities than the participation level in peer feedback.

I – Interviews
FGD – Focus Group Discussions

Chapter 13 Discussion

13.1 Scope of the chapter

This chapter examines the main findings from each of the research questions in turn. The results are interpreted and possible explanations are considered, particularly in relation to the existing literature. Potential limitations are identified followed by a consideration of the significance and contribution of the findings.

13.2 Introduction

In the present study, the implementation of Assessment for Learning (AfL) strategies appeared to be possible in the summative teaching and learning environment of Fairmont Secondary School (Fairmont). The use of AfL strategies in the present research involved students receiving feedback from their peers as well as enhanced feedback from teachers. When considered in an overall sense, the results suggested that the feedback seemed to increase the students' awareness of what they did and did not know. Through the setting of learning goals and reflective writing, the results indicated that students began to monitor, assess, and evaluate their learning in the Social Studies lessons and to take action to close their learning gaps. Through peer feedback activities, the results suggested that students began to better understand the performance standards and, in general, they seemed to apply what they had learnt about the performance standards while marking their peers' essays. The results indicated that this opportunity to test their knowledge about the assessment criteria could have helped them to further reinforce their understanding of the performance standards.

This successful implementation of AfL strategies would not be possible if the students were not trained and coached in how to use AfL strategies. As for the teachers, the support and collaboration during the professional learning sessions helped them to put AfL theory into practice. In addition, enhancing the students' learning seemed to become the central focus of the teachers as they took action to change their classroom instruction to assist the students to self-regulate their learning and to cater for their learning needs. However, sustaining the use of AfL strategies remained uncertain as the teachers no longer used peer feedback, the setting of learning goals, reflective writing, or the performance standards checklist rubrics, as

part of their classroom instruction. Nevertheless, the experience of using AfL strategies may provide the students with a toolkit of learning strategies that they can use in the long run, especially when preparing for the GCE O' level examination.

The objective of the research in the present thesis was to analyse the possibility of implementing and sustaining the use of AfL strategies in a summative teaching and learning environment. The research examined the possible impact of using AfL strategies in classroom instruction and learning, in addition to teachers' and students' beliefs and attitudes. The focus of the AfL strategies centred on the nature and quality of the teachers' written feedback, the student's peer feedback and self-regulated learning, and the use of performance standards checklist rubrics. In this chapter, these findings are discussed in four sections, which correspond to the four research questions.

13.3 The current beliefs and practices around assessment and feedback in the school: Implications for the use of AfL strategies

This section discusses the Fairmont teachers' and students' existing beliefs and practices about assessment and feedback. First, the main findings are outlined, followed by an explanation of these findings and their importance. Alternative explanations of the results are considered and, where possible, the findings from the present research are related to results from similar studies.

13.3.1 Roles of the teachers and the students in teaching and learning

The data from this study showed that the teacher and student participants believed that the role of the teacher was mainly to control learning in class. This seemed to be interpreted as the teacher disseminating knowledge in a clear and structured manner to the students. The teachers also seemed to associate effective teaching with the presentation of information in a composed, direct, and knowledgeable manner which was mentioned by Berry (2010) and Hargreaves (2012) as the teaching and learning practice of a 'testing classroom'. These practices also appeared to be advocated by the Humanities Head of Department (HHOD) whose beliefs may also have possibly influenced the teacher participants. These findings about the role of teachers and students closely matches those obtained by De Vita & Bernard (2011), who also found that, in East Asia Confucius Heritage Culture

(CHC) classrooms, teachers have a tendency to control learning by using teacher-centred teaching and learning practices. There appeared to be an underlying concern from the teachers that their reputation for being effective may be reduced if the textbook content was not delivered in a coherent manner during teaching and learning, as expected by the students. It appeared that, consistent with their expected roles, the teachers deliver content-based lessons which are packaged in a linear fashion which the students possibly memorise and regurgitate during tests and examinations. Similar beliefs and practices were highlighted in Li's (2009) study about how teaching and learning was perceived in the East Asia CHC context.

It can be argued that by packaging the Social Studies lessons in a linear fashion in teacher-directed lessons, the possibility of students being relatively passive learners is high. Given the existing role of teachers and students, it seems possible that the students may not be able to adapt easily to a non-linear teaching and learning practice such as peer feedback. It is not inconceivable that when students are passive learners, the possibility of them being actively involved in deciding what they want to learn, in what order they learn, and how to make connections between the different information they receive, would be challenging. This suggestion is further supported by the ideas of Sweany et al. (1996) and Winne (1995) who also noticed that when teaching and learning is focused on teacher-talk, students appear to be reduced to a more solitary form of learning. According to Winne (1995), it is also highly probable that passive learners may have difficulty becoming active learners when learning involves social interaction such as peer feedback. In addition, the students may not have the skills to manage knowledge and to understand the diagnostic feedback to act upon it, which would make adapting to this new style of learning difficult (Cartney, 2010; Nicol & Macfarlane-Dick, 2006)

It can be seen that the existing roles of the teachers and the students in teaching and learning would predict that the teachers and the students may be 'uneasy' when using peer feedback in teaching and learning. It seems likely that the teachers and especially the students may question the need to change from the usual teacher-talk lessons to a practice such as peer feedback. Students often see peer feedback as 'messy', especially if they perceive their teacher as 'losing control' of learning in the classroom. Since peer feedback involves the teachers and the students sharing

teaching and learning responsibilities, the students may ask what the roles and responsibilities of the teacher are in the process of teaching and learning. This possibility was also highlighted by Carless (2013b, 2013c) and Gielen et al. (2010) in their studies about the challenges of using peer feedback. Carless (2013b) states that as long as the teachers and the students believe that the role of the teacher is strictly to deliver content and not to facilitate learning, it will likely be a challenge for peer feedback to be conducted and eventually sustained. This finding prompts the speculation (also mentioned by Carless (2013b)) that barriers to AfL practice may have something to do with the teachers' and the students' existing beliefs about how teaching and learning practices 'should' be.

Another concern of the students that is evident in the present data is that they doubted whether they would be able to learn from their peers during the peer feedback interactions. A possible explanation for this apprehension of participating in peer feedback is the students' lack of confidence in their ability to organise and make meaning of knowledge from the feedback they receive from their peers. Another factor could be that the students lack confidence as feedback providers, which was also highlighted by a number of the student participants. Also, students seemed to believe that it was the role of the teachers to provide feedback. These findings are in agreement with Brown et al. (2012) and van Gennip et al. (2010), who found that students need to be reassured that they are capable of providing quality feedback.

In addition, there is some indication from the present data that the student participants may not trust their peers' capabilities in giving relevant feedback to improve their learning. This problem of lack of trust was also highlighted by Foley (2013) who found that without trust, the students would disregard the given feedback. Previous research has also found the importance of building an environment of trust and commitment among the students as this helps to downplay validity issues that students may have over the given peer feedback (Nuthall, 1999; Pokorny & Pickford, 2010).

It is somewhat surprising that the teacher participants also voiced their concerns about the students' abilities to learn and acquire knowledge from their peers. A closer examination of the teachers' concerns appeared to show that, possibly the

teachers did not trust that their students were capable of being active learners who were able to self-regulate their learning based on their peers' feedback. Therefore, a possible lack of trust seemed to be not only evident among the students but also among the teachers. This finding aligns with Rollinson's (2005) findings in which he highlighted how teachers were "less than convinced" (p. 23) about the quality of the feedback provided by students during peer feedback. Previous research by Carless (2013c), Ho & Savignon (2007), Kaufman & Schunn (2011), and Nelson & Carson (2006) also showed how the teachers' lack of trust in the competence of the students to provide meaningful feedback to their peers may influence the teachers' decision to not use peer feedback. Berry (2010) and Kim et al. (2010) also stated that for effective learning to take place, teachers must trust that the students are capable of constructing their own knowledge. This suggests that establishing trust among the teachers, the students, and their peers, may be an important first step before peer feedback is conducted.

13.3.2 Use and roles of grades

The results from Phase One showed that the teacher and student participants saw the traditional instruction-assessment model as the best mode of teaching and learning, believing it would ensure that the students would perform well in their GCE O' level examination. The results showed that they believed that the best indicator of success in learning were the grades obtained. It may also be likely that the teacher and student participants' definition of success is influenced by the CHC teaching and learning context. This suggestion is consistent with the research by Murphy (2012) and Biggs (1987) who found that the perception of success in learning in an East Asian context was often concluded when students performed well in their summative assessments and not in terms of satisfaction in accomplishing the learning goals.

The practice of meritocracy and the competitive nature of the Singapore education system, where grades are the epitome of success in learning and are used to determine the future of the students' well-being (Gopinathan, 2012; Kennedy, 2007), is probably a factor in the teachers' and students' decision to 'teach and learn to the test'. This strong emphasis on performing well in summative assessments could have influenced the teachers and the students to focus more on the end product of the learning instead of the means towards successful learning. Earlier works by

Bransford et al. (1999) and Schraw (1998) also reported how performance-oriented learning focused on how the students were performing, rather than on how the students were learning. This practice of 'teaching and learning to the test' is also consistent with the comments made by Kennedy (2007), who stated that it is not a characteristic of the East Asian CHC teaching and learning culture to assess students' learning during the stages of the learning process. This same characteristic was apparent during the lesson observations at Fairmont, where instead of assessing student learning, the teachers' main focus was on disseminating the content to complete the syllabus so that the students could attain good grades during the upcoming test.

To help students to perform well in the tests, drill and practice strategies were used by the teacher participants. In this case, the process of 'drill and practice' appeared to focus on the distribution by the teachers of model essays where the students were expected to memorise (drill) and regurgitate (practice) the information during their tests. Assessing the students' learning seemed to be based mainly on the students' summative marks, with the teachers' awareness of the students' learning progress restricted to the terms 'pass' and 'fail'. The teachers and the students seemed to use the test results to evaluate learning progress and their teaching effectiveness. This use of test results was mentioned by Clarke (2011), Carless (2011) and Reeves (2004) in their studies about making assessment functional to improve teaching and learning practice. From the present data, it seems that the only follow-up activity conducted by the teachers to act on the students' learning gaps was during the correction sessions following the handing back of student work. During this session, it was somewhat surprising that instead of discussing and dealing directly with the students' learning gaps, the teachers only showed the model answers for the test using PowerPoint slides. The students were seen copying the model answers and did not appear to be aware of the importance of seeking clarification from the teacher to understand the performance standards and assessment criteria in relation to their work. The idea that assessment should drive active learning was clearly absent, an issue that was also raised by Bennett (2009) and Jenkins (2010) who argued that assessment should be diagnostic where the aim is to identify and respond to the students' learning needs.

It is reasonable to conclude that these existing teaching and learning practices could be a potential barrier to the use of AfL, particularly because the students lack experience of self-assessing and regulating their learning. On top of this, there is a strong possibility that the teachers may perceive the assessment of students' learning at every stage of the teaching process to be a difficult and unnecessary task. A possible explanation for this is that the assessment of student learning during lesson time could, from the teachers' points of view, take away valuable time that could be used to complete the syllabus and prepare the students for their tests. The same explanation of possible barriers to the use of AfL has also been highlighted by Chan et al. (2006), Harlen (2005) and Berry (2010).

13.3.3 Lack of AfL knowledge

The data from the current study show that even though the teachers claim to know about the theoretical aspects of AfL, it appears that they were reluctant to, or unable to, put these AfL theories into practice. A possible explanation for this may be the teachers' limited knowledge of how to integrate AfL strategies into the Social Studies syllabus. This factor may explain the teachers' preference for using teacher-talk lessons instead of lessons using AfL strategies. This reasoning is supported by Brookhart (2011) who found that in order to increase the possibility of teachers using AfL strategies, they needed to be more literate in their knowledge of assessment, especially in relation to AfL strategies.

It appears that learning how to implement AfL strategies was not the main priority of the teachers because it is likely that they valued teacher-centred lessons more, since they believed that such lessons would assist in producing good results during the GCE O' level examination. Previous research conducted by Richards et al. (2001), and Hattie & Jaeger (1998) also showed how many teachers questioned the need to change their existing classroom practice since it had previously worked well. Hattie & Jaeger (1998) even mentioned how the teachers would rather not disturb the existing teaching and learning processes which had worked well in producing good assessment results. Furthermore, since the use of AfL was not made compulsory by the school, this could have suggested to the teachers that it was not important to implement AfL practices in class. Hence, it could be reasoned that the teachers' strong "habituated" (Leahy & Wiliam, 2012, p. 58) belief in the effectiveness of their

existing teacher-talk practice (as compared to the new AfL practice) could be a barrier to their use of AfL practices.

13.3.4 Uncertainty about the effectiveness of AfL

The present data also point to questions that may be in the teachers' minds about whether AfL strategies would assist student performance in their summative assessments. This concern is in agreement with Ng's (2006) findings which showed that teachers were likely to face the dilemma of implementing innovations (such as AfL) while simultaneously expecting to sustain the rigorous benchmarks of the past. It is possible to hypothesise that due to this dilemma, the teachers may have felt uncertain about using AfL strategies to produce good summative assessment results.

In addition, this uncertainty about the effectiveness of AfL in contributing to summative results also seemed to influence the students' views about the type of pedagogy that may be useful in helping them to perform well in tests and examinations. These 'uncertainties' among both the teachers and the students could trigger an "uncertainty avoidance" attitude (Ku & Lohr, 2003, p. 100). The implications of an 'uncertainty avoidance' attitude were that firstly, the students may choose not to participate (or only participate half-heartedly) in AfL activities, and secondly, the teachers may, to some extent, be unenthusiastic about implementing AfL strategies in their lessons. Such restricted, or less than enthusiastic, participation may be expected to limit the potential benefits of implementing AfL strategies (Carless, 2011).

The teacher and student participants also stated that as long as the GCE O' level examination results play a central role in educational outcomes for secondary school students, there is the likelihood that their teaching and learning practices would be confined to teaching to the test and rote learning. This attitude is consistent with the findings of Cheng (2012), Timperly (2010), Ainsworth & Viegut (2006) and Koh et al. (2012), who suggest that rote learning would prevail if grades were solely used as evidence of student learning.

13.3.5 Professional learning support

From the interview with the Humanities Head of Department (HHOD), and during the observations of the professional learning sessions, it was evident that the

expertise that resided in the school could offer only limited guidance to teachers who were interested in using AfL strategies. It seemed that there was also no AfL professional learning programme available to induct or support the teachers in learning about, and using, AfL strategies. An examination of the professional learning programmes offered by the Ministry of Education showed that training about assessment was mainly focused on the setting and marking of examination papers. There was also no pre-service teacher preparation module focusing solely on the preparation of beginning teachers about the use AfL strategies in their classrooms. In addition, the lack of professional learning programmes about AfL may convey to teachers the importance of summative assessments in teaching and learning practice at the expense of AfL practices. This lack of professional learning support could be another possible barrier to the use of AfL strategies. This finding is consistent with Gopinathan (2012), who stated that the lack of robustness in the knowledge management system would likely be unable to handle the spontaneous drive of new pedagogic thinking, such as AfL. In an earlier study, Hogan & Gopinathan (2008) suggest that for AfL to be implemented and possibly sustained, additional measures may be needed to further develop the function of schools as professional learning organisations.

13.3.6 Assessment culture

The present evidence suggests that the teachers and the students believe that focusing on summative assessments produces the best test and examination results. This belief about using summative assessments possibly has been ingrained as part of the teaching and learning culture at Fairmont. This ingrained belief has implications for the introduction of AfL strategies because, as highlighted by Webb & Jones (2009), the contradiction between the existing teaching and learning culture and the new AfL strategies, such as peer feedback, may be a challenge for the teachers and students to integrate into their teaching and learning practices. In studies conducted by Davison (2013), and Davison & Leung (2009), it was found that the entire assessment culture (including teaching and learning practices) needs to be changed for AfL practice to be successful. As well, if the teachers and the students believe in the importance of change, there is a higher possibility that AfL can be implemented. However, if the teachers and the students appear to be resistant to renewal/ change, then AfL would be hindered. This view is consistent with Ng's (2006) findings in

which he acknowledged the challenges of changing the existing assessment, teaching and learning culture. One implication of this is that there may be a need to support teachers in the early part of the process, even before the implementation of the AfL strategies.

13.3.7 Concluding remarks

From the results about the existing teaching and learning beliefs and practices around assessment and feedback, a few important factors can be highlighted. It seems that the existing summative assessment culture where grades are emphasised, influences teacher's and student's perceptions of the best teaching and learning pedagogy to use. The lack of AfL knowledge and how to incorporate AfL into the current teaching and learning practices also created uncertainty about the effectiveness of AfL in improving learning among the teachers and the students. All these factors could provide challenges to the success of implementing and eventually sustaining AfL practices at Fairmont.

13.4 Outcomes of the intervention to increase AfL practices. Evidence about changes in teachers' teaching and students' learning beliefs, attitudes and behaviours following the intervention to increase AfL practices

In this section, the outcomes of the intervention (with an emphasis on the use of peer feedback, quality written feedback, and self-regulated learning) to increase AfL practices are discussed. This discussion will focus on the change in the teachers' and students' beliefs, attitudes and behaviours. Some areas that will be focused on in this section include changes in the teaching and learning roles of the teachers and the students, the outcomes of active peer feedback participation, and an understanding of the language of assessment.

13.4.1 The roles of teachers and students regarding the use of AfL strategies

The present data suggests that one of the main outcomes of the AfL intervention was a change in how the teachers and the students approached Social Studies teaching and learning practices. From the interviews and the focus group discussions, it appears that the teachers and the students were willing to somewhat redefine their teaching and learning roles in association with AfL strategies. The most likely explanation for this change is that the teachers and students became more aware of

the benefits of student-centred learning that AfL could offer and were possibly more confident about using the strategies as part of classroom instruction.

Through the lesson observations, the teachers noted that the students were seen to be very engaged in their discussions during the peer feedback lessons. The students were seen to be taking more ownership of their learning as they evaluated the given feedback and made decisions on whether to use the feedback as they revised and improved the quality of their essays. A similar result was reported by Cho & MacArthur (2010) who noticed how feedback given to the students increased the students' learning engagement. The data from the multiple response analysis also showed that at least 16.7% of the students stated in their reflective writings that they were engaged in effective discussion with their peers during the second peer feedback session. This increased engagement could contribute to improvements in student learning, particularly because the students were better able to differentiate between an 'explanation' and a 'description' of the factors that caused the Sri Lankan and the Northern Ireland conflicts.

With the introduction of self-regulated learning strategies (the setting of learning goals and the use of reflective writing), the students stated that they were more focused during the lessons since they knew about the learning directions and achievements they needed to accomplish. Jenkins (2010), Stiggins (2002) and Wiggins (2004) also found that when students were aware of the learning expectations, they were able to monitor their learning progress more effectively. The present students also mentioned that when they achieved their learning goals, they became motivated in their learning and believed that they could take charge of their own learning. This increased motivation as a result of the students' facilitating their own learning and attaining learning success was also mentioned by Black et al. (2004) and Juwah (2004).

In addition, the student participants acknowledged that through the reflective writing process, they became more aware of their learning progress, especially the nature of their learning problems. The students stated that before the introduction of the reflective writing process, they always assumed that they understood the lessons. However, through reflective writing, they began to realise that this was not always the case. Also, from the pre- and post-intervention surveys, the perceptions of the

students towards self-regulated learning improved. All of these changes in student actions and perceptions happened together with the teachers sharing the responsibility for teaching and learning with the students. This sharing of responsibility with the students is consistent with previous research about how power (knowledge authority), when equally distributed between teachers and students, can increase the possibility of AfL processes enhancing teaching and learning (Juwah, 2004; Ku & Lohr, 2003; Kurnaz & Çimer, 2010).

The present data also shows that the redefined roles of the teachers and students during the peer feedback activities, as suggested by Rubin (2006), appeared to change their beliefs about who was responsible for ensuring that learning occurred in the classroom. It seems that when the teachers encouraged the students to participate actively during peer discussions, the students were able to actively engage in the process. The students also appeared to be confident about giving and receiving feedback from their peers whereas previously they had doubts about the quality of the feedback received and given. This surprising result may be due to the students' improved knowledge about how to participate during peer feedback. It seemed that students nevertheless were aware that even though their peers played an important role in helping them in their learning during the peer feedback process, the teacher was still the knowledge authority that could be utilised/ sought when needed. The teachers seemed to realise that conducting peer feedback required them to be active in monitoring and guiding the students' learning as they were still the final validator of the students' learning. This same finding was also reported by Everhard (2011), Cartney (2010), and Thompson (2009), who noticed that, despite the role of the teachers having now shifted to become an external reference point, they were still the authoritative gatekeeper of teaching and learning.

Another interesting finding from the lesson observations was that in order for the teachers to encourage the students to validate their peers' feedback in relation to the performance standards, the teachers were seen to be refraining from providing answers immediately to the students when they asked for assistance. It appears that by doing this, the students were forced to re-examine the given feedback in relation to the assessment criteria. This practice could help the students to understand examiners' expectations of their work. It was probably not surprising to hear about a

few students possibly feeling upset because they felt that their teacher was abandoning their teaching responsibilities. Surprisingly, these students who complained were the higher-ability students and not the average- or lower-ability students. It appears that the lower-ability students relied more on their peers' feedback to improve their essays compared to their higher-ability counterparts. A possible explanation for this could be that the lower-ability students might not feel that they had anything to lose in terms of learning because there was the likelihood that their peers who provided the feedback were academically better than them. As for the higher-ability students, they seemed to believe that they were academically better than their peers. As a result, they felt that the feedback given might not be valid in helping them to improve their learning. There is a need for further research to establish a clearer relationship between the attitudes of higher- and lower-ability students about the benefits of peer feedback.

The present data also highlights another important result of the intervention, pertaining to the teachers' misconceptions about their role when AfL strategies were used. From the Phase Three interviews, it was found that the teachers assumed that using AfL strategies was synonymous with the students learning independently without the teachers' assistance. This misconception appeared to emerge possibly because, during the learning workshop, the teachers were informed about how AfL practice should lead to the students having more autonomy over their learning. An emphasis on 'learning autonomy' could possibly explain why the teachers did not inform the students about the learning objectives after Phase Three of the present research, or why they did not read the students' reflective writings after Week Six (Phase Three) of the implementation phase. The teachers possibly thought that the students were supposed to derive their own learning goals and that the reflective writings were more for the students to become aware of their own learning progress.

As a result of the limited involvement of teachers with respect to the students' self-regulated activities, it was not surprising to hear the students talking about the teachers 'abandoning their responsibility' for ensuring that learning had taken place. This finding could relate specifically to the teachers' (mis)understanding of their role in using AfL strategies in the classroom. This suggests that it is important to emphasise that using AfL strategies needs the teachers and the students to work

together in order to be effective. It is also important to explain to the teachers and the students in detail how self-regulated learning in AfL works, particularly the importance of the teachers' monitoring and evaluating of the students' learning progress so that just-in-time assistance can be offered to help the students with their learning. A conclusion about the need for the teachers and students to work together is supported by previous research that highlights the importance of both teachers and students being involved in the reflexive relational process where the teacher guides the students in their learning (Buck, Trauth-Nare, & Kaftan, 2010).

13.4.2 Understanding and use of the language of assessment and performance standards

During the focus group discussions, the students highlighted how the performance standards checklist rubrics had improved the teacher's written feedback. The students felt that the teacher's written feedback was more descriptive, detailed, specific, and constructive, compared to the few ticks, crosses, and marks that the teachers provided before the use of the performance standards checklist rubrics. In addition, since the students could understand the performance standards and the assessment criteria, the teachers' written feedback was now more relevant for the students to use as feed forward. This finding is consistent with that of Pokorny & Pickford (2010) who reported that when the students understood the performance standards, they were better able to assess their own learning progress.

The introduction of the performance standards checklist rubrics seems to have contributed to how the students' used the teacher's written feedback to act on their learning problems. From the present data, it can be argued that when the students received the checklist rubrics, they were better able to consolidate their learning than before the use of the rubrics. In addition, the students also said that they were more motivated to improve their learning. Shute (2008) also indicated that when the students understood the performance standards and were able to integrate their understandings as part of the learning process, their motivation increased because the learning tasks were seen as being more manageable. One possible explanation for this is that the students found the checklist rubrics to be useful as feed forward. The checklist rubrics were seen by the teachers and the students to be precise, detailed, and specific enough for the students to identify their current competency level and

their learning gaps, which they could act on in order to better reach the expected performance standards. This finding, in regards to using the teacher's written feedback as feed forward, is consistent with Shepard (2000) and Gielen et al's (2010) findings, which showed that when students understood the teachers' written feedback, the possibility of the feedback being applied in new learning situations increased, especially when the students saw how their learning had improved.

An interesting finding that emerged from the intervention was that the students admitted during the focus group discussions that through the use of the performance standards checklist rubrics, they understood the assessment criteria better. They thought that this contributed to an increase in their motivation to reach the highest performance standards faster. In Hattie (2008) and Koka & Hein's (2006) studies, they too found that when the students had a clear idea about what success looked like (through the use of the performance standards checklist rubrics), they became more motivated to achieve their learning goals.

It was surprising to see the students becoming more interested in knowing how much they had improved and what steps they could take to further improve their learning. This increased motivation may be attributed to the students being able to understand the language of the assessment criteria in relation to the detailed and timely feedback they received from their teachers. Comparable results were obtained by Nicol (2010) and Wigfield & Eccles (2000) who found that feedback which informed the students of what actions could be taken to reach the highest performance standards increased the students' self-efficacy. Previous research has also shown that when the performance standards and the assessment criteria are explained using student-friendly language, there is a high possibility that the students will understand and meet the performance standards (Andrade, Du, & Wang, 2008; Chen, 2008; McTighe & O'Connor, 2009). The present findings, in relation to the students understanding the language of assessment, are interesting in light of the research about the importance of the teachers being 'transparent' in their sharing of the assessment criteria and the performance standards so as to assist the students to evaluate their work in the same way as the teachers do (Fastré, Van der Klink, Sluijsmans, & Van Merriënboer, 2012; Frederiksen & Collins, 1989; Taras, 2008).

The present findings may also support previous research that indicates that when the students understand the performance standards, they are better able to self-regulate their learning and to provide more meaningful feedback to their peers (Kim, et al., 2010; Price & O'Donovan, 2006). It can be assumed that when the teachers spent time explaining the performance standards to the students, that this further assists the students' understanding of the examiner's marking expectations and the assessment criteria. This type of understanding was also highlighted by Nicol & Macfarlane-Dick (2006) as being essential to helping students to visualise what good performance actually consists of. It is also possible that when the performance standards checklist rubrics were used systematically as a guide when providing feedback, the potential for giving helpful and appropriate feedback increased. Even the teachers acknowledged that when they used the performance standards checklist rubrics, the quality of their marking improved, especially in terms of accuracy and fairness.

Another likely contribution to the students' understanding of the performance standards could be the hands-on practice and discussion session in which the students clarified their doubts about the assessment criteria. It seems that during this session, the students were focused and attentive as they engaged in active dialogue with their teacher and peers about the assessment criteria. According to Nicol & Macfarlane-Dick (2006), Gielen et al. (2010) and Jenkins (2010), when students, teachers and peers are engaged in active dialogue about learning, this moves the learning forward as the students internalise the meaning of the performance standards and the assessment criteria in relation to the feedback (given during the peer feedback sessions or tests/ assignments). In contrast to the present classes following the intervention, the previous Secondary Three Express Social Studies cohorts (2010/2011) were seen (in the experience of the researcher) to be using only drill and practice, and listening to their teachers passively when the assessment criteria were explained. It is possible to speculate that a teacher-centred style of teaching about assessment criteria would have less impact on the students' understanding of the performance standards than when AfL strategies are used.

The opportunity given to the students to apply, articulate, and test their knowledge of the performance standards during peer feedback could have increased

the students' chances of acting on their learning problems while the learning was taking place. Previous research has also shown that, through peer interaction, the students can be seen to be actively adjusting their understanding of the performance standards (Cobb & Bowers, 1999; Newton, 2007) in relation to their peers' feedback. It is possible that when the students understand the performance standards, this knowledge is used when they sit for summative assessment tests. This possibility is consistent with the results of Stiggins & Chappuis (2005) who noted that students fared well in summative tests when they understood the performance standards. This improved understanding of the performance standards could be a factor in why the 2012 cohort performed well in their GCE O' level Combined Humanities examinations.

There also appears to be a connection between the use of the performance standards checklist rubrics and the students becoming more self-regulated in their learning. According to the teachers, the checklist rubrics gave the students specific insights into their current competency level and their learning gaps. These insights gained by the students, according to their own comments, allowed them to take action to rectify their weaknesses. During the intervention phase, the checklist rubrics were attached to all the students' test papers and assignments. It seems possible that when the students received the checklist rubrics, this facilitated their learning by helping them to identify their current competency level and the actions that could be taken to reach the expected performance standards. It may be that the students benefited from the constant reinforcement of the performance standards through the use of checklist rubrics which perhaps may have assisted them to further internalise their understanding of the assessment criteria. The students mentioned that they looked forward to using the performance standards checklist rubrics so that they could scrutinise their performance or even use the checklist rubrics as a guide when answering the essay questions. These speculations about the use of the checklist rubrics are consistent with comments from the teachers and the students, but need to be investigated further.

13.4.3 Sustained use of the performance standards

During the focus group discussions, the students generally felt that the performance standards checklist rubrics had assisted them in improving their essay

writing performance because the checklist rubrics indicated what they needed to do to achieve the expected performance standards. It also appears that the performance standards checklist rubrics provided during the AfL Social Studies lessons in 2011 were useful, as mentioned by the students during the focus group discussions, as a reference about the assessment criteria when the students were preparing and revising for their tests, end-of-year examinations, and the GCE O' level Social Studies examination in 2012. This transferability of knowledge about the assessment criteria may also be useful for students in producing higher quality essays. In addition, the time lapse between Phase Three (September 2011) of the research and the GCE O' level Social Studies examinations (October 2012) may be a factor that could reinforce the students' understanding/ learning of the performance standards. This is consistent with Heritage's (2010b) study in which she found that the students' zone of proximal development improved when more time was given to understand the learning. In Shute (2008) and Nicol's (2010) studies, they also found that when students were given time to reflect, they could then make better judgments about what, and how, improvements could be made in their learning.

13.4.4 Active participation in peer feedback

The present research data suggests that the use of peer feedback contributes to improvements in the students' learning processes. The students mentioned that through peer feedback, they began to question and examine the validity of the given feedback. The reflective writing after the peer feedback sessions also assisted the students to question whether they had understood the performance standards and the assessment criteria. It seems that those students who participated actively during the peer feedback sessions were perceived to be more self-regulated in their learning by the teachers. The teachers mentioned how they observed these actively participating students critiquing their peers' essays and evaluating their own understandings of the content and skills. According to Retna & Cavana (2009), this act of critiquing and evaluating one's own learning could increase the possibility of the students closing the gaps in their learning. This suggestion is consistent with the findings by Li, Liu & Steckelberg (2010) who noticed that often students would act on their learning gaps as they acquired feedback about their performance. A likely explanation is that the students were better able to self-regulate their learning because, after each peer feedback session, they were required to self-assess their learning through the process

of reflective writing. While writing their reflections, the likelihood of the students being aware of their learning difficulties and solving them early appeared to be greater. Previous research has also found that when students self-regulate their learning, the chance of better quality learning improved, and the probability of improved student achievement increased (Black & Wiliam, 1998b; Brookhart, 2007; Cauley & McMillan, 2010; McMillan & Hearn, 2008).

During the second peer feedback session, the students were seen to be more engaged compared to the first peer feedback session. A possible explanation could be that once the students had a clear purpose for why they were doing peer feedback (especially taking responsibility of their and their peers' learning, to gain mastery), they began to take charge by more actively engaging themselves in the peer discussions. This same explanation was also highlighted in Chappuis, et al's (2009) guide to quality peer feedback. The students' enthusiasm towards peer feedback discussions seemed to increase as they realised that, through the peer discussions, they made gains in their learning when they understood the performance standards/ assessment criteria better. This finding of student engagement in peer feedback was a surprise because the literature about peer feedback suggests that, in the CHC context where students are ranked and pitted against one another, collaborative work such as peer feedback will not work well (Mei & Yuan, 2010), and that low levels of enthusiasm and interaction were predicted (Griesbaum & Görtz, 2010; Topping, 2009). In fact, the opposite was found, especially among the higher-ability classes, where active discussions were apparent. A possible explanation for this could be that when the students understood the purpose of peer feedback, and saw the value of, and benefited from engaging in, peer discussion, their levels of enthusiasm and interaction increased.

Based on the students' GCE O' level Combined Humanities results and their peer feedback participation ratings, it was found that the students who performed well in the GCE O' level Combined Humanities examination seemed to show more ownership and responsibility in determining the quality of their learning. These students were also more likely to be rated as being more engaged and occupied in active dialogue during peer feedback; on-task in completing their assigned work during the peer feedback sessions; and having a positive attitude and taking charge of the teaching and learning of the group during the peer feedback sessions. It appears

that perhaps the thoughtful, reflective, and focused interactions these students had may have somehow contributed to improving their learning in the long run. Additionally, during the peer feedback sessions, the student participants, particularly the lower-ability students (and later, the higher-ability students in the second peer feedback session) were seen to be more open to accepting their peers' feedback. They were also seen to be more interested in seeking justifications for the feedback received and were more willing to offer alternative suggestions for the feedback that they rejected. This finding of the students being more engaged in their learning is consistent with Vickerman's (2009) study about the effects of peer feedback on deep learning (mastery of learning for secondary school students). He explains that when students are engaged in deep learning, they understand the subject content better and are interested in sharing their views with their peers. Even though the data needs to be interpreted with caution, it seems possible to make a connection between the students' greater involvement in their learning processes observed here, and the 2012 GCE O' level results, where the students performed better than the 2010/2011 student cohorts.

13.4.5 Students' understanding of peer feedback: From marks to comments

From the peer feedback lesson observations notes, prior to the peer feedback sessions, the teachers were seen explaining the performance standards levels with reference to the possible marks that could be awarded. However, during the lesson observations, the teachers and the students initially focused more on assessing their peers' work in terms of awarding marks, rather than assessing with the intention of providing feedback. It seemed that during the first peer feedback sessions, the students may have misunderstood the aims of peer feedback, when they awarded marks instead of providing feedback to improve the essay. A possible explanation for this focus on marks could be the instructions given by the teacher before the start of the peer feedback sessions. These instructions may not have been clear enough to indicate to the students that their role was to provide feedback and not to award marks. Another possible explanation was that when the teachers were explaining the performance standards checklist rubrics to the students, perhaps the teachers might have focused more on how many marks the students should award their peers' essays, instead of how to apply the performance standards/ assessment criteria when providing feedback.

This finding that the students emphasised the marks more than the performance standards prompted a suggestion to the students to omit the marks listed on the checklist rubrics, as suggested by Pokorny & Pickford (2010) in order to direct the students' attention to the feedback and its use as feed forward. However, during the PLC sessions, the teachers said that when the marks were emphasised, the students would be more serious about participating in the peer feedback activity. This same finding about how marks increase the students' interest in learning and performance was also found by Kluger & Denisi (1996). This was because it appears that the students relate the marks obtained with successful learning. This finding about how the students' related marks to successful learning also indicates that it is a challenge to separate 'successful learning' from 'marks' in a CHC teaching and learning context.

The decision not to omit the marks seemed to result in the students having the perception that the marks that they had given to their peers would be used as part of the continual summative assessment grade. The students seemed to also believe that their essays would not be marked by the teachers since their peers had already marked them. As a result of this misconception, the students were more anxious over the issues of the validity, fairness, and reliability of their peers' marking. It is therefore not surprising to see a handful of the students' initially resisting participation in peer feedback. Previous research has also found the need to provide clear indications to the students that marks awarded by their peers during peer feedback would not be taken into account in the students' final grades (Li, et al., 2010).

Problems that emerged during the first peer feedback session were acted on before the second peer feedback session was conducted. From the lesson observation, it seemed that when the teachers emphasised the purpose of peer feedback, which was to identify the strengths, rectify the weaknesses, and offer suggestions to improve the essays, the students appeared to be more engaged in their peer discussions. During the second peer feedback session, the teachers went through the performance standards/ assessment criteria without making any reference to the marks. The teachers were also seen to be more active in monitoring the students' discussions during the second peer feedback session. The students were seen to be

more focused on providing suggestions to their peers instead of awarding marks, even though the marks listed were not omitted from the performance standards checklist rubrics.

The most likely explanation for this positive change in approach to peer feedback in the second session is that the students better understood the purpose of peer feedback which was to help their peers improve their learning (and not to award marks). This transition of the students from being preoccupied with marks to focusing on feedback in relation to the performance standards is not consistent with Glover & Brown (2006), and Hodgson & Pyle's (2010) findings, that when marks were part of the process, the possibility of the students ignoring the feedback given was high. In the present research, the marks were still there in the second session, but the students had become more interested in the detailed feedback. One implication of the present research is that it is important to provide clear guidelines to both the teachers and the students about the aims of peer feedback, which is to provide feedback about the strengths and limitations of the essays as well as how to improve it. Any misunderstandings about the purpose of peer feedback, might lead to the students focusing only on the awarding of marks.

13.4.6 Quality of peer feedback

One of the doubts that was raised during the interviews and the focus group discussions that could possibly influence the teachers' and the students' attitudes and behaviours towards peer feedback was in relation to the students' abilities to provide appropriate and quality feedback to their peers. With the somewhat pessimistic perceptions about the students' abilities, there was a possibility that this would affect the implementation and outcomes of the peer feedback process. It appeared that the resistance to the use of peer feedback emerged more from the higher-ability classes. It is likely that the higher-ability classes, which were largely comprised of grade-oriented learners, were more concerned about how the peer feedback processes and procedures might affect their grades than the validity and quality of the given peer feedback. This is consistent with Weimer's (2002) findings that the likelihood of the higher-ability students resisting learner-centred strategies, such as peer feedback, was because these students had already acquired a formula for success in learning based on the teacher-talk lesson procedures. However, the students' inabilities to fit this

formula into the learner-centred lessons may have caused these students to conclude that peer feedback is not an effective strategy to improve learning.

During the focus group conversations, the students said that the peer feedback had been helpful in increasing their awareness of their own learning 'blind spots'. However, it was surprising to hear from the students that they actually welcomed the sometimes inappropriate and not always clear and helpful feedback that they received from their peers. Previous research has shown that the students' less appropriate and helpful feedback had created more learning during the peer feedback sessions than the high quality feedback from the teacher (Gibbs & Simpson, 2004). According to the students, this less helpful feedback created more opportunities for them to debate the assessment criteria, correct any misunderstandings they had, and eventually to further reinforce their understandings of the assessment criteria. This same explanation was also reported by Gielen at al. (2010), Harlen (2006), Lyster & Ranta (2013), and Kaufman & Schunn (2011), who also noticed that when the students go 'back and forth' as they articulate and test their knowledge, they undergo a complex repair process which enhances the students' engagement in self-regulatory thinking. However, during the interviews, the teachers raised their concerns about the less appropriate and helpful feedback that may cause the students to learn the wrong content and skills. The teachers felt that, as a consequence, they needed to undo this 'learning' and thus added unnecessary work to their already heavy workloads. This same finding was also highlighted by Harris & Brown (2013).

As the students progressed to the second peer feedback session, the present data showed that they began to demand that their peers not only identify their weaknesses but also offer suggestions to improve their essay. One way of viewing this was that the students were more interested in knowing what they could do to improve their own essays. In Rubin's (2006) study, he also highlights how peer feedback provides more depth and breadth than the teachers' feedback. This finding was quite surprising because even the teacher's written feedback only identified the students' weaknesses with no suggestions given to the students about how to improve their work. It seemed that the students were highly critical of the quality of feedback they received from their peers, but accepted the vague written feedback provided by their teacher. This may suggest that the students may have high expectations of their peers

to give them quality feedback as they begin to understand the purpose of doing peer feedback, which was to improve learning. Alternatively, the students may see the benefits of receiving feedback from their peers as they gain insights about the performance standards in relation to their work, and therefore they want better quality peer feedback.

13.4.7 Concluding remarks

One of the main outcomes of the intervention that was conducted appears to be a change in the way the teachers taught in the Social Studies classroom, which also appeared to be associated with a change in how the students learnt. When the teachers and the students used student-centred learning strategies, such as peer feedback, the students were no longer wholly passive learners but actively discussed the assessment criteria as well as the content and skills with their peers. As a result of the more student-centred learning activities, there seemed to be more active engagement in learning among the students. This increase in engagement, in turn, appeared to lead to the students being more motivated in their learning as they took increasing charge of their own learning through self-assessment and active peer feedback discussion. This change in attitudes and behaviours could also be attributed to the students' growing understandings of the purpose of peer feedback, self-assessment, and the language of assessment, which could have an effect on increasing the students' potential to meet the teachers' learning expectations. The main findings support much of the existing literature about peer feedback, but also add to the literature through an examination of the teacher and student responses to the intervention and how their approach to the AfL strategies developed from the initial stages of the intervention.

13.5 Student self-regulation following the intervention.

This section discusses how the intervention led to changes in the students' learning processes/ strategies, particularly how the students appeared to become more self-regulated in their learning. This includes a consideration of how the changed teaching practices contributed to the students becoming more self-regulated. A range of factors, such as the training and coaching of the students, the need to change the teaching and learning practices, and the concerns of the teachers and the students when using AfL strategies, are also discussed.

13.5.1 Students as self-regulated learners

The present evidence about students being more self-regulated in their learning following the intervention was as follows: (a) their reflective writing showed that they were monitoring and evaluating their learning; (b) the teachers commented that the students were now making it their business to understand "what they know and do not know"; (c) in their reflective writing, it was apparent that the students were setting learning goals; and (d) during peer feedback, and from other data, it was evident that the students were paying attention to the performance standards and acting on them in their own learning and in providing feedback to peers.

The teachers noted that when the students started to monitor and evaluate their learning through the reflective writing process, they became more aware of their current knowledge and their learning needs. There are several probable reasons that could account for the students becoming self-regulated learners. Firstly, the teachers were willing to incorporate self-regulated learning activities as part of their classroom instruction. In order to incorporate these activities, the teachers were seen to be moving away from a more teacher-centred to a more student-centred teaching and learning pedagogy. One possible outcome of this change in the teaching and learning style was the students' transformation from more passive to more active learners. A likely explanation for this change was that the teachers now tended to facilitate learning whereas previously the teachers' roles in teaching and learning were confined to providing answers. Previous research by Potvin et al. (2010) and Wolf & Bokhorst-Heng (2008), indicate that when teacher-centred learning was used, it became a pedagogy of answers where the teachers transmitted knowledge to the students without the students getting involved in making meaning of the knowledge.

During the intervention, the teachers highlighted how their role as facilitators of learning had resulted in a change to the way the students learnt. The teachers felt that the students made it their business to understand 'what they know and do not know' because, possibly, the students realised that the teachers were not going to tell them what they needed to do to improve their own learning. Hence, it was likely that when the students realised that the teachers were no longer dictating their learning (Harlen, 2006), they began to take more responsibility to ensure that they did actually learn (Black, et al., 2004).

For self-regulated learning to be part of the Social Studies classroom instruction, the teachers were seen informing the students about the teaching/ learning objectives. Based on these teaching objectives, the students were then able to set their learning goals, which were later used as a basis to evaluate their learning at the end of the lesson. It seems that informing the students about the teaching objectives was an important step because before the students could self-regulate their learning, they first need to be aware of what they need to accomplish at the end of each lesson. The teachers were also seen to assist the students in evaluating their learning by providing time for the students to write their learning reflections. Previous research has shown that by informing the students of the teaching objectives and providing time for reflective writing, the possibility of the student becoming a self-regulated learner would increase (Gibbs, 2006; Pang & Leung, 2011). In order to facilitate the students' setting of learning goals and the reflective writing process, a reflection booklet was given to each student. In this booklet, the students were required to fill in each section in which they needed to write their learning goals and evaluate/ reflect on their learning based on these learning goals. It is possible to speculate that when the teachers made the setting of learning goals and reflective writing compulsory tasks to be completed and handed in at the end of each Social Studies lesson, the students had no choice but to write 'something' about their learning to avoid any disciplinary problems. It is also possible that the students gradually realised that instead of writing 'something', they may as well reflect on their learning and gain the benefits of being aware of how much they had learnt.

To further emphasise the importance of the students self-regulating their learning, the teachers decided to award marks for the students' reflective writing. It seems that when marks were awarded, the students took the task of evaluating their learning more seriously. As a result, according to the teachers, the students were seen to be more enthusiastic in writing what they did and did not know. It is possible to speculate that the fear of being awarded low marks made the students more serious about reflecting on their learning. This finding of how the marks made the students become more self-reflective contrasts with other research findings that emphasise that marks can be a potential barrier to the use of AfL strategies (Black & Wiliam, 1998a; Clarke, 2011; OECD, 2005). However, in the present research, marks seemed to encourage the students to be more self-reflective.

During the focus group discussions, the students said that they were interested in self-regulating their learning because they felt that when they wrote about their learning problems, the teachers would take action to solve their learning problems. The students also believed that their reflective writing would inform the teachers of their teaching effectiveness so that the teachers could improve their teaching. A possible explanation as to why the students were self-regulating their learning through reflective writing was because they believed that the teachers' would read their reflections, as in order to improve learning, the teachers must be involved in the students' self-assessment process. There is a possibility that when the teachers/ researcher commented or made suggestions to help the students to act on their learning difficulties, the students used these suggestions as feed forward and this helped them to solve their learning problems. This may have resulted in the students seeing the value of writing their learning reflections as they had benefited in terms of increasing their awareness of their learning progress and getting help from their teachers to act on their learning gaps. Another possible factor in the students becoming more self-regulated learners was the use of the performance standards checklist rubrics. According to the students, the checklist rubrics clearly identified their current competency level and the actions that needed to be taken to reach the highest performance standards. When the students were able to reach the highest performance standards or their learning goals, they were seen to be motivated towards their learning and tried to accomplish more. Previous research has shown that when the students saw relevance in self-regulating their learning and had gained the benefits, that they would invest their time and effort into further self-regulation practices (Boekaerts, 1999; Embo, et al., 2010; Zimmerman, 1989, 1990).

13.5.2 Opportunity to self-regulate learning

A factor that may have contributed to an improvement in the student's learning processes appeared to be a gradual awareness that they were able to self-regulate their own learning. During the interviews, the teachers said that when self-regulated learning activities were introduced, they noticed that the students did not seem to realise that they were actually self-regulating their learning, especially during the peer feedback sessions, and after each Social Studies lesson through their reflective writing. Nevertheless, the teachers noticed that the students were becoming more aware of their learning needs and how to act on those needs.

A possible explanation for this could be that the students were mechanically identifying what they did and did not know, when attempting to solve their learning difficulties. Initially, they did not appear to see these acts as self-regulating their learning, but merely adhering to the teacher's instructions about how to complete the reflection booklets. However, as the students experienced the process of understanding their learning goals and strategies for themselves, there was a possibility that they began to see the value of becoming more active in the learning process. In their study, Boud & Molloy (2012) labelled these active learners as "agents of their own change" (p. 705). In addition, Schunk (2001) found that as students became active learners, they began to direct their focus, thoughts, feelings, and actions towards accomplishing their learning goals.

The increased number of assignments given to students during Phase Three of the current study may also have increased the opportunities for the students to self-regulate their learning. This finding is consistent with the study conducted by Shepard (2000) who found that an increased number of assignments may assist students to develop autonomy in their learning and perhaps their ability to self-assess their learning. The increased number of assignments (where prior to the intervention there were far fewer) allowed the students to receive more feedback. With more feedback from teachers and peers, as well as through self-reflection, the students' became more active agents of their own change, taking more action to improve their learning. A similar finding was also highlighted by Pollard & James (2006).

As the students began to see the benefits of monitoring and regulating their learning, it was a surprise to see them actually asking the teachers for more assignments. It seemed that doing more assignments had possibly motivated the students to know what 'they do not know', especially when the performance standards checklist rubrics were attached to their assignments. It is possible that when the students were better able to regulate their learning, they felt empowered as they could take action to improve their learning while the learning was actually happening, whereas previously, they only assessed their learning after their summative tests and were unable to use the feedback as feed forward.

13.5.3 Training the students

When new innovations such as AfL strategies are introduced, teachers have

typically been provided with training on how to conduct AfL lessons (Bennett, 2011; Harlen, 2010; Holloway, 2003). In contrast, students have often not been prepared in any way for engaging in the AfL activities (Al Fallay, 2004; Carpenter & Pease, 2013; Li, et al., 2010; Wood, 2009). As a result, this may limit the students' abilities to engage in AfL strategies. Previous research has indicated the importance of getting students involved in the process of change (Hargreaves, 2012). In Sellen, et al's (2006) study, the need for students to be instilled with collaboration and communication skills so that they would be competent to self-regulate their learning was emphasised. In the present study, the students were empowered with information and trained/ coached to become partners in change as they were given responsibility and ownership to become active self-regulated learners to improve their learning. This is a noteworthy aspect of the present study.

It appears that when the students know what they need to do to monitor and regulate their learning, there is an improvement in the students' learning behaviour as they take more responsibility and are motivated to reach the performance standards. This was evident from the quality of the reflective writing produced by the students as they evaluated their learning at the end of each lesson. This same finding may be related to Ku & Lohr (2003) and Li's (2003) studies who found that when the students were engaged in their learning, they were seen to be more involved in piecing together information and making meaning of their learning.

It is also likely that when the students were taught how to self-regulate their learning and were continually coached by their own Social Studies teacher and the researcher, they seemed to take more ownership of their learning as they appeared to be assessing their understanding of content and skills and taking action to improve their learning. This result was identical to a study by Andrade & Valtcheva (2009) who found that when the students were able to self-assess their learning, they were kept informed of what they were aware of, what they were lacking in, and what they could do to improve their learning.

13.5.4 Changed teaching and learning practices

From the professional learning reflection sessions, the teachers appeared to realise that their existing teaching practices may not have been providing opportunities for the students to monitor and regulate their own learning. There is a

possibility that this awareness encouraged the teachers in their implementation of reflective writing and the setting of learning goals, to help the students to monitor and regulate their learning.

The teachers felt that by incorporating AfL activities, such as the setting of learning goals and reflective writing, that the students may transform from relatively passive to more active learners and increase their awareness of their own learning problems. This would enable the students to take action on their learning gaps. During the interview sessions, the teachers highlighted how, through the students' reflective writing, they were kept informed of the students' learning progress and their own teaching effectiveness. In Bennett's (2009) study, he also mentioned how evidence of the students' learning progress could indicate to the teachers the need to adjust their classroom instruction in accordance with the students' learning needs. Fisher & Frey (2009) and Huebner's (2009) studies also found that student learning success or failure itself (in this case indicated through reflective writing) was a useful form of feedback for the teachers to modify their classroom instruction.

It appears that incorporating AfL strategies with an emphasis on self-regulated learning may require more than just changing teaching practice. There is a likelihood that the teachers need to review their own beliefs about what may constitute effective teaching and their role in effective teaching. Previous research has shown that changing teaching practice might be an emotionally difficult and challenging process, since transforming the teachers' existing beliefs about how they teach signifies the need to reshape their identity as a teacher (Cross & Hong, 2009; Schutz, Cross, Hong, & Osbon, 2007). From the present findings, it seems that any revision of the teachers' beliefs about their role was confronted by the reluctance of the students to accept a change in the role of the teachers.

As the teachers gain more experience in using AfL strategies in their teaching, such as conducting peer feedback and learning reflections, they appear to realise that effective teaching is not actually about telling the students what they should do and what they should know, but instead, guiding them towards an active and meaningful construction of knowledge. This same finding was also discussed in Weimer's (2013) study in which she found that effective teaching was about directing students towards learning, and not about providing formulae which the students mechanically

use without thinking very deeply. During the interviews, the teachers also said that using AfL strategies not only required them to cover the content, but also to use the content more meaningfully to teach the students learning and writing skills. From the intervention, one unanticipated finding was that the syllabus was completed faster than the scheduled time when AfL strategies were used, which contrasted with the teachers' initial beliefs that using AfL strategies required more time and that they would not be able to cover the syllabus.

13.5.5 Encouragement and support

The encouragement and support given to the teachers and the students could possibly be another factor that may have assisted the students to improve their learning processes. During the lesson observations, the teachers could be seen reminding the students about the importance of self-assessing their learning and that the best assessors of learning were the students themselves. It appeared that these reminders may have positively affected the students to monitor their learning as they were seen setting learning goals and reflecting on their learning at the end of each Social Studies lesson. According to the teachers (and the students during the focus group discussions), their insistence on the students using the reflection booklet could have contributed to the students becoming more self-regulated in their learning. According to the teachers, and also the students, it seems that without the reflection booklet, the students may not have had the opportunity to experience and gain the benefit of being more self-regulated learners. In addition, structuring the setting of learning goals at the beginning of the lesson and providing time for the students to reflect on their learning at the end of the lesson were likely to encourage the students to regulate their learning and to improve learning outcomes. This suggestion coincides with the findings of Hertberg-Davis & Callahan (2008) (2009) and King (2002) who reported that when time was provided to the students to reflect on their learning, the possibility of obtaining better results increased significantly.

13.5.6 Addressing concerns

Another factor that may have contributed to the increased use of self-regulated learning strategies was that the teachers' and students' concerns about how self-regulated learning may improve the students' summative performance were addressed. Another concern that was also discussed was why there was a need to

incorporate self-regulated learning strategies into existing teaching and learning practice since teacher-centred teaching had proven to be successful in producing good GCE O' level results. Addressing these concerns was perceived by the researcher to be important to increasing the possibility of self-regulated learning being used to improve learning. It seemed that these concerns were about the students being able to perform well for the GCE O' level examination. Once assurance was given to the teachers that the students may increase their chances of performing well, the teachers were seen to be more open to incorporating self-regulated learning activities in their Social Studies classes. It seems that when open communication was established throughout the research phases and concerns were addressed, the teachers were seen to be more confident about using self-regulated learning strategies and other AfL activities. The same strategy was also used to address the students' concerns however, not many of the students seemed to be interested in having their concerns addressed. The reason for this is not clear, however it may have something to do with the students' perceptions that their concerns may not be important, and thus would not be taken into account by their teacher/ the researcher when implementing the self-regulated learning activities.

Although there is limited literature available about how self-regulated learning strategies may affect students' academic achievements in Singapore, studies conducted in Scotland (Hayward & Spencer, 2010; Hutchinson & Hayward, 2005; Kirton, Hallam, Peffers, Robertson, & Stobart, 2007) and Hong Kong (Berry, 2011a; Bryant & Carless, 2010; Carless, 2005; Chan, et al., 2006; Cheng, 2009) were used as examples to address some of the teachers' concerns. Even after being presented with such evidence, the teachers did not seem to be convinced that self-regulated learning could improve student performance. The teachers seemed to be more focused on the challenges and problems that emerged from these studies instead of the benefits that could be gained in terms of improved teaching and learning practices. Whether and how it is possible to change the teachers' focus to look at the benefits of AfL strategies instead of the problems remains a question for future research.

13.5.7 Concluding remarks

There was evidence that the students' learning strategies improved following the

intervention and the introduction of the setting of learning goals and reflective writing. The students mentioned how they became more aware of their learning progress. From the teacher and student data, it was apparent that the students became more self-regulated learners in a number of ways. An important contributing factor to the students being more self-regulated appears to be the readiness of the teachers to review their own beliefs and practices in relation to effective teaching and learning. Addressing the teachers' and students' doubts about whether AfL strategies, such as self-regulated learning, could improve the GCE O' level results also seemed to assist with convincing the teachers to use AfL strategies in their classrooms. However, the process of convincing the teachers was not an easy task because of an ingrained belief that their existing teaching and learning practices were still the best method to help students perform well in their summative assessments. The provision of time for the students to set their learning goals and to reflect on their learning also contributed to increased student awareness of their learning progress. Requesting the teachers to provide time for reflective writing was a challenge because every minute in class was viewed by the teachers as an opportunity to cover the syllabus in greater detail. Finally, the effective implementation of AfL would not have been possible if the students had not been trained and coached in how to use AfL strategies, or given opportunities to self-regulate their learning through the extra assignments. The results suggest that even after training the students in the use of AfL strategies, it was important that the teachers continued to coach and encourage the students in the use of these strategies.

13.6 The challenge of, and strategies for, sustaining AfL

This section discusses the challenge of sustaining AfL strategies, such as the shortage of time, class size, and the fear of failure. This is followed by a discussion of how school leaders, the learning workshops, and the PLC, assisted in the development of strategies that are effective for sustaining AfL.

13.6.1 Value placed on AfL

A possible challenge that proved to be a barrier to sustaining AfL in the school was the teachers' and students' perceptions of the effectiveness of AfL strategies to ensure student achievement. Both the teachers and the students acknowledged during the interviews and focus group discussions that AfL strategies may have increased

their awareness of the learning problems in class. However, they doubted whether the strategies could improve summative assessment performance. During the learning workshops, the teachers voiced concerns that AfL was a Western innovation and not suitable in a CHC teaching and learning context where summative performance defined success in learning. This same issue about AfL as a Western construct was also highlighted by the Hong Kong teachers studied by Bryant and Carless (2010).

During the interviews, the teachers also raised concerns that AfL strategies such as peer feedback would not work in a CHC context because the students would not be able to give genuine feedback for fear of affecting their friendship with their peers. Previous research had also raised the same concern, particularly about how AfL strategies such as peer feedback may not synchronise with the Confucian value of classroom/ public harmony, since peer feedback is a public process, and the chance that students may 'lose face' when their peers discuss their work could be detrimental to the dignity and credibility of the students (Mei & Yuan, 2010; Rubin, 2006; Wang & Wu, 2008; Zhu & Mitchell, 2012). Although this concern about how friendship would be affected was also raised by the students, it was surprising that after the implementation of the peer feedback activities, the students did not mention that peer feedback had affected their friendships during the focus group discussions, possibly because they actually saw it as helping each other.

Another possible factor that proved to be a challenge for the sustainability of AfL practices was the lack of adequate information about the use of AfL strategies in a competitive CHC teaching and learning environment in relation to improved GCE O' level Combined Humanities results. Through the interviews, the teachers said that they were accountable for the students' achievements, and the uncertainty of whether AfL strategies could help performance in terms of grades caused them to have second thoughts about sustaining the use of AfL strategies. This concern about accountability in relation to the students' grades was also discussed in Harris & Brown's (2013) study, who highlighted the fear of teachers' losing control of assessment when AfL strategies were used.

In general, therefore, the lack of confidence about the effectiveness of AfL strategies in relation to exam performance seems to suggest that the use of AfL

strategies in Singaporean classrooms is still in its infancy. It can be assumed that with the lack of evidence about the possible effectiveness of AfL strategies in improving the GCE O' level Combined Humanities results, this reduces the likelihood of AfL being structured as part of teaching instruction in the long term. A further study with greater focus on how the use of AfL strategies might improve the GCE O' level results is therefore suggested.

13.6.2 Once-only teaching and learning exercise

From the interviews, it appears that the teacher participants may have thought that using AfL strategies was a once-only activity and they anticipated that the students would be able to continue using the strategies on their own. Research has shown that for AfL to have a positive impact on learning, it needs to be used continuously (Heritage, 2010b; McTighe & O'Connor, 2009; Stiggins, 2005b, 2007; Stiggins & Chappuis, 2005).

The teachers admitted during the interviews that after they had shown the students how to monitor and act on their learning through the setting of learning goals and reflective writing, they believed that the students would be able to self-regulate their learning without further assistance from the teacher. The teachers also explained how they assumed that since peer feedback activities had helped the students to perform well for the test that the students would be able to perform just as well for the next few tests without using peer feedback anymore.

From the interviews, the teachers also said that their teaching focus was not on the learning process after Phase Three of the present research, but instead on completing the syllabus to prepare the students for their summative assessments. It can thus be suggested that as long as summative performance is emphasised, this will likely govern the learning conditions and the style of teaching and learning behaviour. This suggestion about how the assessment culture governs teaching and learning seems to be consistent with other research (Harlen, 2006; Kennedy, et al., 2008) which found that an examination dominated teaching and learning environment can affect how teachers engage students in their learning. The dominance of an examination culture can also have negative implications for engagement in learning, as confirmed by Harlen (2006).

During the interviews, the teachers said that they expected the students to set the learning goals on their own, possibly being unaware that this was not viable if the students were not informed of the teaching objectives. As a result, the students were not able to set their learning goals in relation to the teachers' learning expectations/ performance standards. This same finding was also noted by Jang, Reeve & Deci (2010) and Lee & Reeve (2012) in their studies, where they emphasised the importance of synchronising the students' learning goals with that of the teachers' expectations, particularly for the students to make sense of the teachers' feedback in relation to the set goals.

During the PLC reflection sessions, the teachers admitted to spending less time than expected reading the students' learning reflections. This lack of attention given to the reflective writing process may explain why the students felt that it was a waste of time writing what they did and did not know if the teachers could not respond to their learning needs. The teacher's apparent lack of action to assist the students with their learning (highlighted during the focus group discussions) may be another reason for the students resisting the use of AfL strategies since they anticipated that in an AfL setting, their teachers would be working actively in partnership with them to improve their learning, and that this was not happening.

A possible explanation for the lack of action by the teachers may be the possibility of the teachers unknowingly associating AfL practices with 'learning independently' instead of with 'independent learning'. It is possible that this misconception could be due to the shortcomings of the professional learning sessions where the teachers were not adequately informed that students must be guided and coached consistently when AfL strategies are used. This suggests that a review of the effectiveness of the existing professional learning sessions in relation to the teacher-student partnership in AfL should be undertaken. Hence, it may be concluded that in order to sustain AfL strategies, the teacher and the students need to work together and have a commitment to using the strategies over a substantial period of time.

13.6.3 Shortage of time

The issue of the shortage of time proved to be another challenge in sustaining the use of AfL. It appears that the teachers and the students believed that the shortage of time to cover the syllabus in preparation for the GCE O' level examination prevented

them from using AfL strategies continuously. This problem of the shortage of time was also highlighted by Berry (2010), Harlen (2005), Chan et al. (2006) and Saravanan (2005), who stated that classroom developments, such as the use of AfL, were often thwarted when teachers were pressed for time to complete the syllabus to prepare students for summative examinations.

Due to the perception of the shortage of time, the teachers in the present study admitted during the interviews that they no longer informed the students of the teaching objectives after Phase Three of the research. During the focus group discussions, the students also said that the time provided for reflective writing was limited to a maximum of three minutes or, in some cases, no time at all was provided for the students to reflect on their learning after Week Six of Phase Three when the final peer feedback session occurred. Often (if not always), the teachers instructed the students to complete their reflective writing at home after Week Six of Phase Three. During the interviews, the teachers also admitted that when the students handed in their reflective writing, they did not have enough time to read them. It is probable that the teachers' actions could have sent a signal to the students that the setting of learning goals and reflective writing were not important for their learning anymore. It is therefore not surprising that towards the end of Phase Three, there were a number of students handing in poor quality reflective writing to their teachers because they knew that the teachers were not reading them.

From the teacher interviews, it is possible to speculate that the teachers had the perception that using AfL strategies required them to spend extra time to prepare the AfL lessons. The teachers saw this as an add-on to their existing workload. This finding suggests that the teachers reverted to the teacher-centred lessons possibly because their existing workload was already heavy and that using teacher-talk lessons would require less time to prepare the teaching and learning materials.

In relation to the shortage of time, the students may also perceive that the time used for AfL activities, such as peer feedback, the setting of learning goals, and reflective writing, could be better used to cover the syllabus or for drill and practice exercises to prepare them for tests and examinations. From the teachers' interview data, it seems that preparing the students for the GCE O' level examination was more important than ensuring learning through the use of AfL strategies. This finding,

where examinations are the priority of learning, was similar to Stobart's (2008) findings that the use of AfL strategies was often discontinued when examination pressures and anxieties set in.

With the teachers' workload and the pressure to complete the syllabus in time for the tests/ examinations, it is possible that the teachers thought that they may not have the time to plan and prepare AfL lessons; to conduct and monitor learning during peer feedback; to guide the students to set learning goals and reflect on their learning; and to incorporate the performance standards checklist rubrics while marking. Given the perceived shortage of time to prepare and conduct AfL lessons, a further implication of this would be that the teachers would revert to teacher-talk lessons, as they believed that teacher-talk lessons were more time efficient and effective for preparing students for the examinations. These findings are also consistent with other studies (DeLuca, Luu, Sun, & Klinger, 2012; Mabry, Poole, Redmond, & Schultz, 2003) which have shown that teaching to the test was possibly more time-efficient in preparing the students for tests/ examinations and could also better meet accountability demands. However, upon closer examination of the teachers' teaching workloads at Fairmont, it seems to be comparable to that of their counterparts in Hong Kong (Li & Luo, 2009). The Hong Kong teachers have somewhat managed to use and sustain AfL strategies in their classrooms, but have also yet "to effectively implement the plans and policies as set" (Berry, 2011b, p. 56). It is concluded that more research needs to be undertaken to compare Singapore and Hong Kong teachers' workloads and work practices in relation to sustaining AfL practices.

From the interviews and focus group discussions, it is apparent that the teachers and the students did not see AfL practices as being practical for use in a summative teaching and learning environment. This conclusion made by the teachers and the students was based on their experience of using AfL strategies for only 10 weeks in Phase Three of the present study. However, within the 10 weeks of using AfL strategies, there was evidence of improvement in student learning strategies and outcomes. For example, the students were able to differentiate between an 'explanation' and a 'description', and were able to write three factors about the Sri Lankan and Northern Ireland conflicts. These were the aims set by the teachers

during their learning workshops for the students to achieve when they used AfL strategies in their Social Studies lessons. Further research using AfL strategies for a longer period of time is recommended in order to examine the possibility of a change in the teachers' and the students' beliefs, attitudes and behaviours towards AfL strategies. It is possible that, with more time and a teaching and learning culture that emphasises the process of learning, AfL strategies could be sustained. There also seems to be a need to direct the teachers' and students' focus to the benefits gained through the use of AfL strategies, instead of the challenges faced.

13.6.4 Class size

During the interviews, the teachers mentioned that a possible challenge for the sustainability of AfL strategies was the large number of students in each class. An implication of this was that the teachers may not be able to give personal attention to each of the student's learning needs, which seemed to be consistent with the findings of Rice (1999) and Blatchford et al. (2011) who found that large class sizes could be a challenge for the provision of individualised attention to students. It is possible, therefore, that the large number of students in each class could explain why the teachers were less frequently able to read and comment on the students' reflective writing, to provide quality individualised feedback, and to monitor student learning during peer feedback activities. This factor concerning class size and how it affects learning has also been found in other research (e.g. Boud & Molloy, 2012; Konstantopoulos & Chung, 2009; Mitchell & Mitchell, 1999; Rockoff, 2010; Schanzenbach, 2006; Yeh, 2009), showing that class size matters when enhancing student learning and that a reduction in the number of students in a class may lead to learning benefits.

It appeared that the average class size of 42 students for the teacher participants and the nature of the Social Studies subject (which the teachers believed to be content-based and hence, more suitable for teacher-centred learning) may also have been deciding factors that influenced the teachers' decision to not use AfL as a continuing pedagogical strategy in their Social Studies classes. The problem of large class size and the choice of pedagogical strategy corroborates Hattie's (2008) findings which showed that class size may play a significant role in determining and facilitating potential pedagogical change towards student-centred learning.

It is probable, therefore, that large class sizes could have influenced the teachers' decision to revert to teacher-talk lessons. From the interview data, it seemed that the teachers' fear of losing control of assessment or possibly classroom discipline due to the large class size was a factor in their decision not to sustain AfL practices. It is difficult to explain this result, however it may be related to the findings of Harris & Brown (2013) and Brown et al. (2011) who found that CHC teachers were highly accountable for their students' achievements and for classroom discipline. Having a large number of students in a class may pose a challenge in terms of ensuring that each student is 'on task' during peer feedback lessons, which was a potential problem mentioned by the teachers during the PLC reflection sessions. According to the teachers, if the class size was smaller, it would be easier to monitor the students' task behaviours and that it would increase the possibility of checking on the students' learning progress. This finding about class size corroborates with the ideas of Blatchford et al. (2011), who suggested that large class sizes would possibly make the monitoring of learning less rigorous, as there were too many students to be individually monitored.

Contrary to the teachers' expectations that large class sizes would possibly make the implementation of AfL strategies a challenge and cause 'adverse' effects on student learning, the present study appears to have found the opposite. A possible explanation as to why the teachers were able to implement AfL strategies in large classes could be that with proper planning, this had enabled the teachers to use AfL strategies as part of their classroom instruction. During the peer feedback lessons, it was observed that despite having large class sizes, the teachers were able to conduct these peer feedback lessons. The teachers interacted more with the students as they provided just-in-time assistance, guided the students to self-regulate their learning, showed/ identified to the students what they did and did not know, and assessed and addressed the students' learning needs by reading their reflective writing, which they could not have done during teacher-talk lessons.

These 'achievements' of the teachers in conducting AfL lessons, especially peer feedback, could be important evidence that despite having large class sizes, it is still possible to use AfL strategies. In regards to student learning, the teachers noted that the students were more engaged in their learning and finally knew the difference

between an 'explanation' and a 'description' of a factor after the second peer feedback sessions. It seems that having large class sizes and using AfL strategies may not have a negative effect on student learning. The present findings about the ability to implement AfL with large classes is in agreement with Yeh's (2009) findings which showed that when AfL strategies were used, pedagogy had a greater impact on student learning than the reduction of class size. This means that the nature of classroom instruction was more likely to determine whether the students were active or passive learners which could determine the learning quality instead of large class sizes.

Previous research has also found that despite reductions in class size, teachers still have a tendency to use teacher-centred teaching which means that smaller class sizes may still not enhance learning processes and outcomes (Blatchford, et al., 2011). Other researchers have also been cautious about linking smaller class sizes to improved learning, particularly due to the Hawthorne effect (Blatchford, et al., 2011; Rockoff, 2010; Yeh, 2009). There was a high possibility that studies conducted about reduced class sizes may influence teachers' thinking that if there was evidence to show an improvement in learning, that policy-makers might reduce class sizes and thereby reduce the teachers' workload. More research needs to be undertaken into the association between class size and the use of AfL strategies in the CHC secondary school context and its effects on student achievement.

Despite the apparently encouraging findings from the present research that AfL strategies may be able to be implemented in large classes, the data needs to be interpreted with caution because with the use of AfL strategies, e.g. the use of performance standards checklist rubrics and reflective writing, in large classes, this is likely to increase the teachers' existing workload. On top of this, with the researcher's assistance in assessing the reflective writing and during the peer feedback activities, the present findings may not be transferable to other teaching and learning environments where there may be an absence of external assistance.

13.6.5 Student choice

The matter of student choice could also be a reason for AfL strategies not being sustained in the present study. After Phase Three, the teachers acknowledged during the interviews that they had given the students the choice of whether they wanted to

self-regulate their learning through the setting of learning goals and reflective writing. It is not surprising that the students chose to self-regulate their learning 'mentally' instead of through their writing, because this was the easiest way to not do the work. When the teachers were asked why the students were given the option to self-regulate their learning, they felt that the students should be trusted about how best they thought they could learn.

This explanation of 'trusting the students' provided by the teachers may also have a different interpretation. It seems that by giving the students the option to write their reflections, if the students chose not to do it, this could mean less work for the teacher and less time needed to discipline the students who might have resisted the reflective writing if the activity was made compulsory. Tan (2011b) also comments on the same issue of empowering the students (referred to as trusting the students in the present study). In his study, he explains that since self-assessment was a critical component of improved learning advocated through the use of AfL, it was essential to make self-assessment compulsory so that the students were able to take action on their learning needs based on the given feedback.

The teachers' decisions not to make reflective writing compulsory possibly sent a message to the students that if reflective writing was not advocated by the teachers, then perhaps writing about 'what they know and do not know' was not important. This suggests that self-regulated learning activities, such as reflective writing, needs to be practiced more regularly and should be made compulsory until it becomes the teaching and learning culture of the class.

13.6.6 Teacher ownership

Another factor that could challenge the continual use of AfL strategies was getting the teachers to take ownership of their professional learning. It seems that the use of AfL strategies in the Social Studies class may not be an important professional learning area for the teachers. During the PLC sessions, it was observed that the teachers were only enthusiastic about the use of AfL strategies during the initial stage of the present AfL research. This enthusiasm appeared to wane as the teachers realised that using AfL required a lot of time to be invested which they thought they could not afford. The sense of time pressure grew when the teachers faced setbacks, especially when they faced the students' resistance such as only partial compliance with the reflective writing task.

Even though there was no open resistance from the teachers, it is possible to speculate that there was partial resistance, particularly when suggestions about how to improve the first peer feedback lesson plan was rejected without discussing the viability of implementing the suggestions. Other forms of partial resistance from the teachers included collecting the reflection booklets and not reading and commenting on them, not informing the students of the teaching objectives, and not providing time for the students to reflect on their learning. It is possible that the teacher participants did not see the research as belonging to them, but rather to the researcher, and thus they may have felt that they would not be accountable if the AfL research failed to improve the students' learning. This lack of ownership is similar to the findings of Leahy & Wiliam (2012), who found that when teachers chose their own professional development, they would ensure that they would make it work, but if the learning did not belong to them, they would often react by blaming the researcher/ professional developer for the failure of the new methods used in the classroom.

13.6.7 Fear of failure

The fear of failure from the teachers could also have played a role in the implementation and lack of continuance of the use of AfL strategies. During the first PLC session in 2011, the Fairmont school leaders addressed the teachers' fear of failing to achieve the aims of the AfL PLC project. The teachers were encouraged to plan for success when experimenting with the new teaching pedagogy and not to be fearful of failure. This encouragement was highlighted by Jenkins (2010), and Harris & Jones (2010) to be essential in spearheading innovation such as the use of AfL strategies.

Apart from this type of encouragement, the school leaders also made it clear to the teachers that they may need to shoulder some form of accountability towards the students' learning during the present AfL study. These messages from the school leaders seemed to lead to the teachers worrying that if their AfL classroom experiment failed, they might be marked down during the teachers' annual ranking and promotion exercises, which may affect the teachers' career advancement. The danger of jeopardising the possibility of gaining advancement was also mentioned by Hargreaves (2012) and Liew (2012) as a reason why the teachers would not take the

risk of using new innovations in class. As failure to enhance student learning may be linked to the teachers' self-image, this could also inhibit them from using AfL strategies continuously, because their self-image and worth were important, particularly in the CHC context.

13.6.8 Solutions for teachers' concerns

There are several strategies that may help in sustaining the use of AfL practices. First and foremost, addressing the teachers' concerns about using AfL strategies in the Social Studies classroom may be helpful. It is likely that if the teachers' concerns are addressed and changes are made to act on them, the possibility of AfL strategies being sustained would increase. These concerns include the lack of time to conduct marking; large class sizes; the students' resistance to AfL practices; and the nature of the Social Studies Scheme of Work, which made it difficult to incorporate AfL strategies as part of classroom instruction.

13.6.9 Teachers' commitments

If AfL strategies are to be sustained, it would appear that the teachers must be committed to their use. However, if the teachers do not believe that AfL strategies can improve the students' learning, then sustaining the use of AfL practices may be difficult. The teachers gave various reasons for avoiding the use of AfL strategies, such as their uncertainty about their effectiveness in relation to performance on summative tests (the same reason was also found in Chan's [(2011)] research). There is also the fact that teachers cannot afford to put in the effort and time to make AfL strategies work because of their workloads. Deneen & Boud (2013) label this logistical difficulty in implementation as 'pragmatic resistance'. In Bakkenes, Vermunt & Wubbels' (2010) research, they found that teachers would purposely organise their lessons in such a way that the results would "certainly prove that the new approach did not work and their theory of practice would be confirmed" (p. 540).

Hence, much work may be needed to convince teachers that AfL strategies actually help the students with their learning. One possible way of doing this is to direct the teachers' attention to the revision period before the commencement of the GCE O' level examination. During this period, the students appear to take greater responsibility for their own learning. There is a possibility that the self-regulated

learning strategies used in Phase Three of the present research had taught the students to be aware of what they know and do not know and the actions needed to close their learning gaps. This suggests that AfL strategies, such as self-regulated learning, may be most effective during revision time when the students are learning independently without the teachers' guidance.

13.6.10 School leaders

The support of school leaders is also important for the implementation and sustainability of AfL practices. Previous research has shown that when school leaders are prepared to change current values, beliefs, structures, and processes to make way for new thinking about teaching and learning, durable change is made possible (Bredeson, 2000a; Cheung & Wong, 2012; Fullan, 2007). School leaders should be committed to giving sustained support and putting in place an effective teaching and learning structure/ environment to assist teachers to sustain AfL strategies (Berry, 2011a; Chan, 2011; Wiliam, 2012). The school leaders should be prepared to provide a "whole-of-system" (Fullan, 2007, p. 18) reform where AfL strategies could be institutionalised/ integrated as one of the school's strategic thrusts. In ensuring that AfL strategies are continually used, these strategies need to be integrated into the curriculum, syllabus, assessment, and pedagogy so that all these components can be coordinated to fit the Social Studies classroom ecology. Chan (2011) and Tang et al. (2010) also echoed similar views, where they highlighted that through integration, sustained impact on pedagogical change is possible. The assistance of the HHOD or the School Staff Developer (SSD) may be needed in order to monitor the teachers' use of AfL strategies. The HHOD and the SSD could work together to mentor the teachers and guide them in sustaining the strategies. In addition, the SSD could take over the role of the researcher as a resource person to support the teachers.

13.6.11 Learning workshops

Learning workshops may also be an effective method to help sustain AfL strategies as teachers' awareness about AfL theory and practice can be broadened in these types of sessions. Previous research has shown that when teachers are willing to open their hearts and minds to the possibilities of using AfL strategies (learning process) as an equally valid teaching pedagogy as assessment of learning (product of

learning), the likelihood of a permanent change in teaching and learning practices becomes greater (Fu, 2010; Shim, 2008). Effective learning workshops can help to sustain AfL strategies if the teachers are prepared adequately with the requisite skills.

As many teachers perceive AfL practice to be a Western construct (Kennedy, et al., 2008) and thus, not suitable to be used in a CHC teaching and learning environment, 'indigenising' AfL lesson plans to suit the existing Social Studies curriculum could be one of the priorities of professional learning. Previous research has shown that a comprehensive learning workshop that builds on the teachers' AfL knowledge and aims at improving teaching and learning (preceded by a change in teaching practice) may be needed to sustain the use of AfL strategies in the classroom (Archibald, Coggshall, Croft, & Goe, 2011; Blank, de las Alas, & Smith, 2007; Darling-Hammond & Richardson, 2009b; Grigg, Kelly, Gamoran, & Borman, 2013). For AfL practices to be sustained, besides the 'how' to implement the strategies, the 'why' should also be emphasised, so that the possibility of the strategies being abandoned would decrease if improvements in learning did not appear immediately. As found by Hayward & Spencer (2010), a deep understanding of AfL theory may increase the possibility of AfL practices being sustained.

13.6.12 Concluding remarks

Many of the challenges and associated recommendations for sustainability discussed in this section are linked to the teachers' and students' beliefs about the possible (deleterious) impact of AfL practices on the students' results in the GCE O' level examination. Since there is a lack of evidence showing that the use of AfL strategies in Social Studies can improve the GCE O' level results, the teachers and students were apprehensive about using such practices. The teachers and students would rather use teacher-talk lessons than AfL strategies, since they were convinced that teacher-centred lessons could deliver good summative results given the limited amount of time to prepare students for the examinations. The large class sizes at Fairmont also contributed to the challenges of sustaining AfL strategies as the teachers thought that they were not able to give attention to each student's learning needs. The decision to give the students a choice (e.g. whether to do reflective writing) was based on the teachers' perceptions that the students had already gained enough experience to use the AfL strategies on their own. Implementing AfL

strategies at Fairmont was helped by the support provided by the school leaders. Through the PLC sessions, the teachers were provided with the time to plan, conduct, and review AfL lessons. However, sustaining AfL strategies became a challenge when the PLC sessions no longer provided the teachers with the time to collaborate with each other, as the teachers were now on different learning teams. Thus, the lack of continuity in the AfL PLC project could also have prevented the AfL strategies from being sustained in this study.

13.7 Might AfL strategies have contributed to improved high stakes assessment results?

This section discusses whether, and how, AfL strategies may have contributed to the improved GCE O' level Combined Humanities results. Attention will be paid to how peer feedback participation, peer feedback assignments, and the reflection booklet may have had an influence on the Common test and GCE O' level results.

A notable finding from the present research was the relationship between the ratings of participation in peer feedback and the 2012 GCE O' level Combined Humanities results. In this section, the ways in which AfL strategies and increases in students' self-directed learning may have contributed to an improvement in the GCE O' level results is discussed. In addition, this section will examine Black, et al's (Black, Harrison, Hodgen, Marshall, & Serret, 2011) claim that if guidelines for the implementation for AfL are applied, summative assessment results will improve.

In general, the 2010 to 2012 GCE O' level Combined Humanities results revealed that, regardless of whether the teachers used AfL strategies or assessment of learning, the students fared well by achieving above the national percentage passes. Nevertheless, analyses performed on the GCE O' level results suggested that AfL strategies could possibly have added value to the students' learning and improved the quality of the passes. It seems that after the teachers and students used peer feedback, self-reflection, and the performance standards checklist rubrics, the 2012 cohort was able to attain more percentage distinctions as compared to the previous cohorts. In the following sub-sections, how peer feedback, self-reflection, and performance standards checklist rubrics could possibly contribute to the 2012 GCE O' level results is discussed.

13.7.1 Impact of AfL strategies on peer feedback essays, Common Tests and GCE O' level results

It appears from the results that a possible impact of AfL strategies on learning performance was not seen immediately in terms of both essay and Common Test (CT) performance, but may have been evident a year later when the students sat for their GCE O' level examinations. Previous research has shown that this longer-term effect may happen because the effects on learning of practices such as goal setting, use of performance standards, peer feedback, and self-reflection may take time to consolidate and to integrate with the students' already existing learning strategies (Lantolf & Poehner, 2011; Yorke, 2003).

It can therefore be assumed that the short period of time given to the students to revise their essays following the peer feedback sessions may explain why there were few improvements made in these essays. It is likely that the students might still have been processing the feedback given by their peers and making the decision whether to accept the feedback, when they were instructed to make the revisions. In fact, the students' essays were returned to them for revision in the next Social Studies lesson (a day later) and within an hour of the lesson, the students needed to respond to their peers' feedback. It is likely that the short time given to the students to think, analyse, and make decisions about what and how to revise their essays may explain why the majority of the students submitted their essays without ample revision and, at times, chose to ignore the feedback given by their peers. A similar explanation may also apply to the peer feedback performance ratings not being related to the second Common Test results. These findings parallel the conclusions of Lundstrom & Baker (2009) who stated that it would take some time before the students could develop their thinking skills, evaluate their peers' feedback, and decide whether to take feedback into account when revising their essays.

A possible explanation of why the students who were more engaged with peer feedback and other aspects associated with self-directed learning fared better in the GCE O' level Combined Humanities examinations may arise from the fact that, for six weeks before the GCE O' level examination, the school implemented a revision programme where the students could consult with their teachers after school to seek help with their learning. In these revision sessions, students made appointments to

meet their teacher individually or in groups and used them to clarify their content knowledge and to further sharpen their writing skills. It is possible that the previous experience of AfL, where the students became more self-directed, contributed to them using similar strategies during the revision programme, where the emphasis was placed on the students being more active in their learning. The students needed to identify what they wanted to learn, what they did not know, and what help they needed, during the revision sessions. It appears that during this examination preparation period, when the students were likely to be highly motivated to learn, they could draw on particular learning strategies to help them in their learning. During this time, the students needed to be more self-directed/ self-regulated to identify and solve their learning problems immediately before they sat for the examinations. The intervention in Phase Three may have provided the students with learning tools related to self-regulating their learning which were possibly used during the revision period before they sat for the GCE O' level examinations. These learning tools included skills to monitor and evaluate their learning, knowing "what they know and do not know", reflecting on learning goals, and using the performance standards. Previous research has shown that when students are self-directed to acquire more knowledge, these learning tools assist their learning and possibly also serve as a motivating influence to increase the students' desire to learn, and the confidence to do so (Gureckis & Markant, 2012).

13.7.2 Extension of the learning strategies to other Elective Humanities subjects?

It is possible that the teaching and learning strategies that were part of the intervention in the Secondary Three Express Social Studies classes may have been extended and applied, to some extent, in the Elective Humanities subjects. With reference to the Combined Humanities (2192) syllabus, the assessment objectives (see Table 50) of all the Combined Humanities subjects were similar, focusing on: testing of knowledge, constructing explanations, and interpreting and evaluating data. Hence, there was a possibility that the student participants may have used/ applied the AfL skills that they had learnt in Social Studies to the Elective Combined Humanities subjects: Geography, History, and/ or Literature.

Table 50 Assessment Objectives for Social Studies, History, Geography and Literature

Assessment Objectives	Social Studies	History	Geography	Literature
Objective 1: Knowledge				
Demonstrate relevant factual knowledge	✓	✓	✓	✓
Objective 2: Constructing Explanations				
Demonstrate an understanding of concepts and terms appropriate to the syllabus	✓	✓	✓	✓
Select, organise, and apply the concepts, terms, and facts learnt	✓	✓	✓	
Make judgments, recommendations, and decisions, respond with knowledge	✓	✓	✓	✓
Objective 3: Interpreting and Evaluating Sources/Given Information				
Comprehend and extract relevant information	✓	✓	✓	
Draw inferences from given information	✓	✓	✓	
Analyse and evaluate evidence	✓	✓		
Compare and contrast different views	✓	✓	✓	
Distinguish between fact, opinion, and judgment	✓	✓		
Recognize values and detect bias	✓	✓		
Draw conclusions based on reasoned consideration of evidence and arguments	✓	✓	✓	
Communicate a sensitive and informed personal response				✓
Express responses clearly and coherently				✓
Assessment Specification Grid AO 1 + AO 2 = 25% AO 1 + AO 3 = 25% Total 50% (Assessment Objectives – AO)	✓	✓	✓	AOs = 50%
Duration 90 minutes	✓	✓	✓	100 mins

In addition, however, the 2012 cohort was slightly academically better than the previous cohorts (see Table 43), which could have somewhat added to the quality of the passes and distinctions. The smaller number of students in the 2012 cohort (2012/166, 2011/199, 2010/185) could perhaps have allowed the teachers more time to assist each student to improve his/ her learning. Finally, it also needs to be kept in mind that the GCE O' level results involved a combination of subjects. Nevertheless, a case has been made here for the possible effects of AfL strategies on Social Studies and possible generalisation to other subjects, however, this reasoning is speculative at this stage.

13.8 Conclusions

The present research has shown that it is possible to successfully implement AfL strategies in an environment that has a focus on summative assessment and teacher-directed teaching strategies, but that, in the main, the AfL practices were not sustained. The evidence obtained about current beliefs and practices around assessment and feedback suggest that, in a CHC teaching and learning environment, implementing AfL practices provides particular challenges.

Following the intervention, the teachers were seen to be informing the students about the teaching/ learning objectives, which were then used by the students to set their learning goals and eventually as a basis to evaluate their learning. In addition, the students were equipped with self-regulating strategies to increase their awareness of what they know and do not know in relation to the performance standards/ assessment criteria. This awareness may have led to the students taking action to improve their learning.

The change in the teaching and learning instruction from a teacher-centred to a more student-centred model during the intervention also provided the students with the opportunity to become more self-regulated learners. In addition, the teachers were seen to be assisting the students to take ownership of their learning by coaching the students in monitoring, evaluating, and reflecting on their learning. The evidence also points to the AfL practices not being fully sustained, due partly to the teachers' and the students' continuing perceptions of the importance of covering the syllabus/ curriculum. Teacher-directed learning was seen as the best way to accomplish this.

Encouragingly, the present research suggests that AfL strategies may be implicated in apparent improvements in the GCE O' level Combined Humanities results for the 2012 cohort. Students who were more engaged with peer feedback performed better in the GCE O' level examination. It can be speculated that a reason for the better results may have been that, during the revision period prior to the examination, the students used self-directed learning skills that they developed as part of the AfL intervention.

Overall, there are a number of implications/ recommendations that emerge from the findings of the research and these will be discussed in the concluding chapter.

Chapter 14 Recommendations, limitations and directions for future research

14.1 Scope of the chapter

The aim of this chapter is to highlight the main contributions and significance of the research conducted in this thesis. This is followed by a number of recommendations for sustaining AfL practices, the limitations of the research, and recommendations for further research.

14.2 Introduction

The present research has established that it is possible to implement Assessment for Learning (AfL) strategies in a summative teaching and learning environment. However, sustaining the use of AfL strategies is a challenge in a Confucius Heritage Culture (CHC) context where the perceptions of classroom teaching and learning, the aims of education, the context and situations, the demographic composition, and the cultural and historical background are all determinants of how teaching and learning are shaped. The research has emphasised the bridging of AfL theory into practice, as reflected during the professional learning sessions. An iterative sequential mixed methods approach was used, where a variety of data were collected that allowed multiple viewpoints and data sources to be employed in order to understand the teaching and learning environment at Fairmont Secondary School. This approach was designed to increase the validity of the present research findings through the process of triangulation.

14.3 Contributions of the research

The present research has addressed a gap in the research on the use of AfL strategies in a Singaporean CHC secondary school context. The 15 month short-term longitudinal study involving Secondary Three Express Social Studies students and their teachers, provided evidence about their perceptions of AfL strategies, as well as the benefits and challenges of using such teaching and learning strategies. This study also empowered the students by giving them a 'voice' to share their perceptions and experiences as self-regulated learners arising from the implementation of AfL strategies. The present research also demonstrated that when the students were

trained during the learning workshops and coached by teachers/ the researcher, they were better able to engage in using the AfL strategies. The present research is noteworthy because throughout the implementation phase, no attempt was made to change the existing assessment system at Fairmont Secondary School or the Scheme of Work. In fact, the intervention was designed to build on the current assessment system.

From the present research, it was found that the teachers' and students' existing capacities and readiness to use AfL strategies hampered the implementation of AfL practices. In addition, the teachers' and students' existing beliefs, attitudes, and behaviours in favour of teacher-centred classroom instruction to produce good summative assessment results, over student-centred learning, provided a challenge for the implementation of AfL strategies. However, as is evident from the findings, well-designed professional learning workshops and Professional Learning Community (PLC) sessions that cater to the teachers' learning needs, provided the teachers with the required knowledge to translate AfL theory into practice.

Through the professional learning workshops (designed with reference to adult learning theory), the teachers were equipped with the 'what and why' of AfL theory, while the PLC sessions served as the 'how' in implementing AfL practice. These professional learning sessions became an important platform for the teachers to collaborate, support each other, and to make time to implement and review their AfL lessons.

With the knowledge gained from the professional learning sessions, the teachers understood the importance of informing the students about the teaching objectives of the lesson, so that the students could tailor/ personalise these teaching objectives as their own learning goals which, in turn, could assist them in monitoring, evaluating, and reflecting on their learning through the process of reflective writing. In addition to the learning goals, the performance standards checklist rubrics were designed to help the students identify their current competency level and the actions that they needed to take to improve their learning. To further assist the students to self-regulate their learning, peer feedback sessions were conducted where the students assisted their peers in identifying what they 'know and do not know'. During the peer discussions, the students were given the opportunity to debate, articulate, and test

their knowledge, and subsequently to make decisions about whether to use the feedback given as feed forward.

Evidence from the present research shows that for AfL practices to improve student learning, two main changes are needed. The first is to change the teachers' beliefs about how students' learn and how they interact with their peers during learning. When the teachers believe that the students are capable of self-directing their learning, this appears to lead to a shift from teacher-centred teaching and learning practices to a more student-centred learning model. Through this change, the students were seen to transform from mainly passive to more active learners. Secondly, the students must be willing to take more responsibility and ownership for self-regulating their learning. This is why learning workshops for the students were organised to inform them about the benefits of engaging in AfL strategies since a key to improving learning, and for the successful implementation of AfL, is the students' ability to self-regulate their learning. In order to prepare the students, hands-on learning workshops were organised focusing on learning how to set goals, how to monitor and evaluate learning through reflective writing, how to participate during peer feedback sessions, and how to use the performance standards checklist rubrics to improve their learning.

In terms of sustaining the use of AfL strategies, the present research also found that it is pertinent that both the teachers and students work in collaboration. This means that the teachers should work *with* the students to identify what they know and do not know and together initiate actions that increase the students' learning competency. This collaboration means coaching the students throughout the learning process.

To increase the chance of AfL strategies being sustained, school leaders should be prepared to change the school's existing values and beliefs to make way for the integration of AfL strategies into the curriculum. The need to revamp the assessment system/ culture of the school becomes important so that everyone in the school can embrace AfL practices.

14.4 Significance of the research and its findings

For schools, this research provides guidelines about how to implement AfL

strategies in a summative context. The present research in principle should provide a useful blueprint for school leaders and teachers when implementing AfL strategies and in eventually sustaining their use, since no concession was made to reduce the teachers' workload, the number of students per class, the summative test quota, or to adjust the timeframe for the syllabus to be completed.

For policymakers, the findings may be useful for reviewing both pre-service teacher preparation courses and in-service professional learning courses, particularly in preparing teachers to use AfL strategies. The present research suggests that there is value in a sector-wide education reform process to accommodate AfL practices into the teaching and learning pedagogy, curriculum, and assessment system.

As for the research community, the present study goes beyond providing evidence of the benefits and outcomes of AfL for improving learning. Attention was also given to the students' voice during the implementation of AfL strategies. The outcomes, impact, and challenges in this research centred on the experiences of the students. Importantly, the research has provided more information about students as self-directed learners arising from the implementation of AfL strategies, particularly in a CHC context at the upper secondary level. Finally, the research was conducted in a CHC type of learning environment and not the usual Western-oriented pedagogical context, meaning that its results are possibly more authentic when learning about the use and impact of AfL practices in a summative teaching and learning environment.

14.5 Recommendations about sustainability

The following recommendations about sustaining AfL practices are based on the findings of the present research.

Addressing the teachers' concerns about AfL practices is an important first step towards sustaining AfL strategies. As time is needed for the teachers to provide quality written feedback, cutting down on the number of school-wide, department, academic level, and committee meetings could create empty pockets of time for the teachers to mark and give quality feedback. The teaching assistant could also be deployed to assist the teachers during the peer feedback sessions in order to maintain class discipline and to prepare the AfL teaching materials. It is also recommended

that AfL strategies be used early in the Secondary Three academic year so that the students can adapt to the changes in the teaching and learning practices and to eventually establish AfL as the new classroom culture. As for the Scheme of Work, the teachers should understand that it is used only as a guide and thus it can be changed to take into account unexpected contingencies or learning opportunities. Hence, as suggested by Chan (2011), working with the teachers to align and design AfL pedagogy that fits the teachers' and students' teaching and learning needs, as well as their assessment and examination demands, appears to be critical for the sustainability of AfL strategies.

For AfL strategies to be sustained, teachers need to be committed to the continual improvement of their teaching practice. Wiliam (2012) recommended that in order to motivate teachers to sustain AfL strategies, they should focus on any AfL strategies that they feel comfortable in using, or the strategies that they believe would make a difference to student learning. Chan (2011) suggested that teachers need to reflect continually on "the processes of their knowledge-building" (p. 174) for classroom innovation (such as AfL strategies) to be sustained.

Another recommendation is for school leaders to provide a whole-of-system reform. It can be assumed that by initiating a whole-of-system reform process, the continuation of the implementation stage might be sustained beyond the first year. Hence, planning should not be limited to the implementation of AfL strategies, but instead to the issue of how to sustain the use of AfL in the long term. It is also important that school leaders establish expectations with the teachers pertaining to the continual use of AfL strategies. For example, school leaders could appoint the teachers involved in the AfL research as AfL advocates/ role models where they would be required to use/ apply the AfL pedagogical skills continually or to assist other teachers to use AfL strategies. According to Fullan (2007), when good ideas such as AfL strategies are initiated, the chance of sustaining their use depends on the support of other teachers. According to Chan (2011) & Tang (2010)**,** when teachers share their experiences and build their knowledge with others, the possibility of an innovation being sustained greatly improves. Therefore, to sustain the use of AfL strategies, it appears to be important to integrate AfL at the department level (if not at the school level), so that AfL strategies can become a "collective pedagogical

repertoire of members of the department" (Tang, et al., 2010, p. 633) and eventually the teaching and learning culture of the school.

It is also recommended that training, and eventually coaching, be provided to all students who will eventually use AfL strategies as part of their learning strategy. This suggestion about the importance of training the students is supported by Sadler's (1989) & Gielen et al.'s (2010) research in which they found that if AfL strategies were to become the new teaching and learning pedagogy, the students must be trained and later coached in how to use these strategies. Teachers should also consistently coach students in using AfL strategies and not simply assume that the students are competent to use AfL strategies independently. It is important to emphasise that using AfL strategies in teaching and learning is a joint effort between teachers and students. Harrison (2013), Davis et al. (1990), Nicol & Macfarlane-Dick (2006) also affirmed the importance of the teachers (and the students' peers) in assisting and facilitating the students in constructing knowledge, particularly in integrating existing knowledge with new knowledge to enhance learning.

Also, for AfL strategies to be sustained, the teachers and students should apply what they have learnt from the learning workshops when they return to the classroom, as stated by Fullan (1993) in his work about educational change and how to sustain changes in teaching and learning practices. If the teachers and the students are committed to applying what they have learnt, it may be possible to see a permanent change in the teaching and learning culture (Hargreaves et al., 2013). According to Fullan (2007) & Edward (2002), for any change in teaching and learning to be sustained, time must be allowed because changing teaching and learning practices is a slow process, particularly if the existing practices have been embedded as part of the classroom culture.

In addition, the pre-service teacher training programme could be used as a platform to inform and train beginning teachers about AfL strategies and how to integrate these strategies into the existing teaching and learning practices. This suggestion was also mooted by Sadler (1998), Bennett (2009), and Stiggins (2002), who found that pre-service teacher training focused only on the setting of examination papers, as well as scoring and interpreting these scores. It can be speculated that, together with some of the other factors mentioned here, if beginning

and experienced teachers are equipped with AfL knowledge, the possibility of sustaining AfL practice will increase.

Another recommendation that may help to sustain the use of AfL practice is to improve the quality of teachers' professional learning programmes, which means that lecture-style workshops should be avoided. Berry (2011a) suggested that professional development should be a "collaborative and negotiated activity" (p. 209) and not prescribed through 'top down' directives. Instead, teachers should be involved in active teaching, assessment, observation, discussion, and reflection during their professional learning sessions (Hargreaves, 2007; Hargreaves, et al., 2013; Knowles, Holton III, & Swanson, 2012) to increase the possibility of sustaining AfL practice. The PLC sessions should also emphasise the 'what, why and how' of AfL strategies, which may also increase the possibility of AfL strategies being sustained.

As part of the professional learning programme, PLC sessions are an important platform to improve teachers' professional learning and could be scaled up to help sustain the use of AfL practices. PLC sessions can provide time for teachers to learn more about how to put AfL theory into practice, particularly in the long term. As the teachers increase their AfL knowledge, it can be surmised that this would increase the confidence and self-esteem of the teachers to use AfL strategies continually.

Providing sufficient time for teachers to engage in professional learning in the long term could also help sustain the use of AfL strategies. In addition, the PLC project should not be limited to the implementation of AfL strategies during the timeframe of the PLC project. PLC sessions need to incorporate planning about how to sustain AfL strategies in the long term by integrating AfL strategies into the curriculum. Perhaps having an AfL PLC project running for two cycles would help to sustain the use of AfL strategies. In research conducted by Timperly et al. (2007), and Darling-Hammond & Richardson (2009a), it was found that the provision of time and frequent contact among PLC participants became important in sustaining change.

Another suggestion provided by the teachers was to select PLC learning team members carefully based on their character and personality, and their views about,

and commitment to AfL, who could eventually be advocates for the use of AfL strategies. The findings of Pike (2008) and Rigelman & Ruben (2012) showed that the presence of a 'wet blanket' was likely to dampen the enthusiasm and self-esteem of the other PLC members, which might jeopardise the continual use of AfL practice. Therefore, there is a need to involve teachers who are positive about the innovation in question.

Another suggestion that could help in sustaining AfL strategies is to provide teachers with AfL resources such as teaching and learning materials. In the present research, teachers' busy schedules seemed to be a barrier that prevented them from preparing AfL lesson plans and materials. The fact that most of the AfL lesson plans and teaching materials were prepared by the researcher, and reviewed by the teachers for improvement during the PLC sessions, made the implementation of AfL strategies easier, but it also suggests that sustaining them would be difficult without such support. According to Goh & Gopinathan (2006), Singaporean teachers are accustomed to a spoon-feeding culture, where almost everything is provided for them, including curriculum guides, textbooks, and teaching materials. Hence, it becomes important for the teachers to be involved and to experience the process of creating the AfL lessons, such as peer feedback sessions, early during the PLC sessions so as to increase the teachers' ability to continually use AfL practices. These AfL lessons could then be shared (or placed in a resource bank) for other teachers to use at any time and this may also increase the possibility of AfL being sustained.

14.6 Limitations

While the present research was successful in achieving the research purpose and answering the research questions, a number of limitations of the study need to be acknowledged.

The limitations of time and personnel meant that only the Secondary Three Express Social Studies teachers and students at Fairmont Secondary School were involved in the study. The small number of participants means that the findings, while of significance, may be limited in their transferability to other settings. Hence, caution needs to be taken when interpreting the findings since their generalisation is

not automatic (Babbie, 2013). However, the present research has provided an in-depth understanding for curriculum specialists, school leaders, and teacher practitioners who are seeking to better understand the implementation, benefits, challenges, and sustainability of AfL practices.

Secondly, the extent of the present research was limited by the requirement to complete the syllabus as stipulated by the Social Studies Scheme of Work. This resulted in a limited number of AfL lessons being conducted, such as those involving peer feedback.

Thirdly, the research participants, particularly the teachers, were given substantial support (Wiliam, et al., 2004) in preparing lesson plans, teaching materials, the marking of assignments, and other logistic preparations. This form of support may not be available to other teachers if they want to use AfL strategies as part of their classroom instruction.

Fourthly, this research does not take into account the parents' views of using AfL practices in teaching and learning. As the parents are important stakeholders and play a large role in influencing the students' beliefs, attitudes, and behaviours in class, their perceptions towards assessment and grades are important in understanding how these might influence students' perceptions towards AfL practices.

While these limitations are acknowledged and help to place the present research in context, they also create opportunities for further research into AfL practices.

14.7 Recommendations for future research

The findings of this research indicate opportunities for other possible research into AfL theory and practice. Replicating the present research in more schools would further strengthen the validity and reliability of this study (Yin, 2003).

The present research provides evidence which suggests that in order to enhance student learning, both assessments for, and of, learning should not be seen as dichotomous, which was also emphasised by Berry (2011a) and Jenkin (2010) in their studies. Hence, the present results add weight to calls for more knowledge about ways to integrate AfL practices into the existing summative assessment teaching and learning pedagogy.

The present research focused on how AfL practices could contribute to learning. The findings did not suggest that AfL practice should replace summative assessment. It must be acknowledged that summative assessment has its place in the Singapore context, where meritocracy is the basis of a fair society. It is important that future research investigates the impact that AfL strategies have on high-stakes national examination results.

Research has also shown that AfL strategies can improve the learning of students with lower academic abilities (Black & Wiliam, 1998a; Carless, 2007b; Marsh & Heng, 2009; Miller & Lavin, 2007). However, the present findings suggest that classes with higher-ability students can also gain when AfL strategies are used, particularly during peer feedback sessions where they were seen to be involved in active discussions. Further research is recommended to examine how AfL strategies, such as peer feedback, may improve student learning among students of different ability levels.

14.8 Final reflections

As with many attempts at changing teaching and learning practices, the present research met with some success in terms of the implementation of AfL practices, but was ultimately limited in sustaining the use of AfL activities. It is not claimed that AfL strategies are the only and best way to improve teaching and learning, a comment reinforced by Black & Wiliam (2009). The reality still remains that in Singapore, just like in Hong Kong where CHC influences the teaching and learning pedagogy, high-stakes tests and examinations influence how teachers teach and how students learn (Berry, 2011a).

The dilemma that the teachers in the present research faced in terms of adopting AfL strategies and, at the same time, ensuring that students performed academically well, was also documented in Berry's (2011a) study. She described this dilemma as "a tug-of-war, with one end being pulled by a combined force of the deeply entrenched examination culture, economic demands, social values, and political influence, and the other end by the education conceptions encompassed in the new AfL initiatives" (p. 209). To 'loosen' this contention, the reasoning from the present findings is in accord with Carless (2005), namely that for change to happen, it is

important to actively engage the teachers' and students' hearts and minds about using AfL strategies. To engage the hearts and minds of the teachers and students, collaborative learning workshops were conducted here, where deep cognitive domain understanding was one of the main learning aims to improve teaching and learning. This is also suggested by Bennett (2009) and Black & Wiliam (1998b).

The present results demonstrate that it was difficult for the teachers to gain a deep cognitive understanding, which was also seen to be the case in Bennett's (2009) seminal review about AfL. There seems to be a sound basis to Bennett's (2009) suggestion that for deep domain understanding to be achieved, pre-service teacher training should incorporate a module about AfL and that this should be further built upon during the in-service professional learning programme. As found in the present research, time must also be provided for teachers to put their knowledge and skills about AfL strategies into practice, which is also consistent with Bennett's (2009) arguments. The present research suggests that at least two cycles of AfL PLC should be conducted, which echoes previous research about engaging teachers in iterative cycles where AfL practice could be used.

The present research, together with earlier studies, suggests that when students are able to understand the assessment criteria and use them as benchmarks to self-regulate their learning, they are more able to achieve success in learning, and this also increases their motivation towards improving their learning further (Bennett, 2009; Black & Wiliam, 2009). The present research also supports previous results that for feedback to be effective, students must be able to reflect upon and construct meaning from the given feedback, to ask questions, and to act on their learning needs (Carless, Salter, Yang, & Lam, 2011; Handley, Price, & Millar, 2011; Hattie & Timperley, 2007; Irons, 2008; Nicol, 2010; Wiliam, 2011a). Training and coaching the students became an important part of the intervention to help them to self-regulate their learning, and to learn how to give and receive feedback. This also resonates with recent calls by higher education researchers on assessment and feedback that more attention needs to be given to developing students' capacities to evaluate judgements, particularly during the peer feedback process (Cowan, 2010; Nicol, 2013; Sadler, 2010).

The present findings indicate that feedback (peer from students and written from the teacher) improved not only simple tasks such as differentiating between an explanation and a description, but also complex tasks such as writing an explanation of a factor that caused the Northern Ireland or the Sri Lanka conflicts. In the present research, the students were seen to be using information provided by their peers about their learning, and information from the checklist rubrics about their competency level as feed forward, which supports Black & Wiliam's (2009) argument that feedback can only function formatively if the students use the given feedback to improve their performance.

The present research also found that the peer feedback discussions and processes seemed to create useful conversations about learning. The students were actively involved in articulating and testing their knowledge, which was similar to Black & Wiliam's (2009) findings about how the process of cognitive conflict and the social construction of knowledge led the students to engage in self-regulating their learning. The present research found that when the students realised the value of conducting peer feedback, and were confident in providing this feedback, that they were seen to engage more during the peer feedback sessions. In Hattie & Timperley's (2007) review, they also found that students were more willing to engage in peer feedback when they saw the benefits that they could gain in terms of improved learning. Putting a 'tick' or a 'cross' or giving marks without feedback did not appear to enhance student learning, as discovered in the present research. This finding is similar to that of Sadler (2010). According to Sadler (2010), identifying what is right or wrong in the students' work does not help them to improve their learning. However, as reported in previous research, providing students with the opportunity to discuss and review their learning through peer feedback processes can enhance student learning (Cartney, 2010; Liu & Carless, 2006; Nicol, 2011; Nicol, Thomson, & Breslin, 2013).

This present research about how peer feedback can improve student learning also supports Nicol et al. (2013) and Roscoe & Chi's (2008) findings about how students learned by constructing meaning of the given feedback themselves and by applying the performance standards/ assessment criteria, through the use of critical thinking when providing feedback to their peers. Another key finding in the present research

is that when the students understood the performance standards/ assessment criteria they were better able to self-regulate their learning, give better feedback to their peers, and produce better quality work. These results resonate with those of Topping (2003b) and Price & O'Donovan (2006) who reported that students gained learning experience as they applied/ internalised the assessment criteria during the feedback/ assessment process.

Finally, a recommendation from the present research is that for AfL to be sustained, the strategies need to be embedded into the curriculum, which was also suggested by Shepard (2005). Previous research has also suggested that a change to the system and not just the approach towards assessment needs to be made (Bennett, 2009; Fullan, 2007). By integrating AfL practices into the curriculum, the possibility of AfL being sustained is increased. This could also limit teachers from using AfL strategies only once or twice. It also assumes that students can be successful independent learners. As found by Black & Wiliam (2009), teachers need to "follow up each success in a sustained and strategic way to build further the learner's capacity to learn" (p. 20). In addition, the present research also suggests that for AfL to work and to be sustained, the teachers and students need to work together in partnership to improve learning. As partners in teaching and learning, the teacher should be a facilitator/ conductor and not a controller, so that students can become more active self-regulated learners (Black & Wiliam, 2009).

Overall, when AfL practices were used as part of classroom instruction, the teachers and students seemed to gain through the changes to teaching and learning practice. There is no doubt that there is a need to suitably tailor, adapt, and customise the use of AfL strategies to suit the individual classroom/ summative context, so that the strategies can better contribute to student learning. It can be concluded and reasoned that, in the Singaporean context, AfL strategies of the kind undertaken here may have the potential to help students to self-regulate their learning and, if used appropriately, perhaps then contribute to their academic performance, possibly even on summative assessments such as the GCE O' level examination.

Appendix A   Letter of Introduction, Information Sheet, Classroom Observation, Approval, Permission to Use, Information for Dissertation

<div align="center">

INFORMATION SHEET FOR PARTICIPANTS
FAIRMONT SECONDARY SCHOOL

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Full Project Title: Assessment for Learning: A School-Based Intervention Study in Singapore

Student Researcher: Rozi Binte Rahmat

Your Consent
You are invited to take part in this research project.

This Information Sheet contains detailed information about the research project. Its purpose is to explain to you as openly and clearly as possible all the procedures involved in this project so that you can make a fully informed decision whether you are going to participate.

Please read this Information Sheet carefully. Feel free to ask questions about any information in the document. Once you understand what the project is about and if you agree to take part in it, you will be asked to sign the Consent Form. By signing the Consent Form, you indicate that you understand the information and that you give your consent to participate in the research project.

You will be given a copy of the Information Sheet and Consent Form to keep as a record.

Aims
The purpose of this research project is to improve the teaching and learning of Social Studies using assessment for learning strategies. The research project will also analyse the possibility of implementing and sustaining the use of assessment for learning strategies in teaching and learning. The research will also look at the viability of integrating the use of assessment for learning and assessment of learning in the Singapore education system. This research is being conducted as part of a PhD thesis and the proposed training programme is not endorsed nor owned by MOE or the school.

Procedures
Participation in this project will involve completion of an online questionnaire in mid-February and mid-August 2011. The questionnaire will take no longer than 45 minutes to complete. The questionnaire involves items relating to goal setting, self-assessment, self-regulated learning and the use of feedback. Your Social Studies teacher will arrange a time during your Social Studies lesson sometime in mid-February and mid-August 2011 for you to complete the online questionnaire, and upon completion you will be requested to click on a button to submit it to a researcher.

You may also be invited to participate in focus group discussions either on Phase 1 (mid February 2011), Phase 3 (mid-August 2011) or Phase 4 (February 2012). This focus group discussion will consist of between 4 to 8 students and will take no more than 60 minutes per session. The researcher will personally approach you and arrange a suitable time and date for the discussions which will be held in the Information Technology Room (Library).

You will also be attending 2 'Developing Effective Learner' workshops during the March and June holidays. Each of these workshops will be about 2-3 hours. In these workshops, you will be taught how to be an effective self-regulating learner.

Possible Benefits
Possible benefits include learning how to be a self-regulated learner where you can achieve your learning goals and targets by monitoring your learning progress on a regular basis. Learning how to use these assessment techniques can also raise your motivation and self-esteem as you are able to use given feedback more effectively to improve your academic success.

Possible Risks
There are no foreseeable risks for participating in this study as you will simply be required to complete questionnaire items, share your views during the focus group discussions about your study habits and attend the workshops about assessment for learning strategies. However, in the unlikely event that you do experience any form of discomfort or distress through participating in this study, you may approach the school counsellor. You may choose to withdraw from the study at any time prior to submitting the questionnaire and focus group discussions without any effects occurring for you.

Privacy, Confidentiality and Disclosure of Information
You will be instructed not to write your name or any other identifying details on the questionnaire or during the focus group discussions, so as to ensure strict anonymity and confidentiality. Only aggregated data will be reported in a thesis and by submitting the questionnaire you are agreeing to allow your results to be used to form aggregate data. As for the focus group discussions, you will remain anonymous when data gathered is used for reports.

The information collected during the study will be stored in hard-copy and computer files in secure storage for a minimum of 5 year, in accordance with Flinders University guidelines. Following this period the hard copy files will be destroyed and the computer files deleted. A report of the study may be submitted for publication to an educational journal, however individual participants will not be identifiable in such a report.

Results of Project
You are encouraged to contact the researcher at the completion of the study to be informed of the aggregate research findings. Aggregate results will be published in a thesis and it is anticipated that they will also form part of a publication in an educational journal.

Participation is Voluntary
Participation in any research project is voluntary. **If you do not wish to take part you are not obliged to.** If you decide to take part and later change your mind, you are free to withdraw from the project at any stage before you submit your completed questionnaire or part of the focus group discussions. After you submit your questionnaire or attend the focus group discussions it will not be possible to withdraw from participation as there will be no way of identifying which questionnaire or views during the focus group discussions is yours. Any information obtained from you to date will not be used and will be destroyed.

Your decision whether to take part or not to take part, or to take part and then withdraw, will have no effect on your progress/studies, your relationship with Flinders University or through which you have been invited to participate.

Before you make your decision, the researcher will be available to answer any questions you have about the research project. You can ask for any information you want. Sign the Consent Form only after you have had a chance to ask your questions and have received satisfactory answers.

Ethical Guidelines
This project will be carried out according to the *National Statement on Ethical Conduct in Human Research* (March 2007) produced by the National Health and Medical Research Council of Australia. This statement has been developed to protect the interests of people who agree to participate in human research studies.

The ethics aspects of this research project have been approved by the Human Research Ethics Committee of Flinders University.

Further Information, Queries or Any Problems

If you require further information, wish to withdraw your participation or if you have any problems concerning this project, you can contact the Student Researcher/Supervisor responsible for this project:

Rozi Binte Rahmat
Flinders School of Education
Flinders University, GPO Box 2100
Adelaide, South Australia
Telephone + 61 882012441 (67929737 Singapore)
Fax +61 882013184
Email: bint0009@flinders.edu.au

Emeritus Professor Alan Russell
Flinders School of Education
Flinders University, GPO Box 2100
Adelaide, South Australia
Telephone +61 882015237
Fax +61 882013184
Email:

> *This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project Number 5102). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au.*

LETTER OF INTRODUCTION

Dear Sir/Madam

This letter is to introduce Rozi Binte Rahmat who is a PhD student in the School of Education at Flinders University in South Australia. She will produce her student card, which carries a photograph, as proof of identity.

She is undertaking research leading to the production of a thesis or other publications on the subject of assessment for learning which will be an intervention study in Singapore using feedback to enhance teaching and learning.

She would be most grateful if you would volunteer to assist in this project, by granting an interview/focus group discussion and completing a survey which covers certain aspects of this topic. No more than 90 minutes on one occasion for the interview/focus group discussion would be required. For the survey, student participants will be able to complete within 45 minutes.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting thesis, report or other publications. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions.

Since she intend to make a tape recording of the interview, she will seek your consent, on the attached form to record the interview, to use the recording or a transcription in preparing the thesis, report or other publications, on condition that your name or identity is not revealed and that the recording will not be made available to any other person.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting thesis or publications.

Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on +61882012441, fax +61882013184 or e-mail alan.russell@flinders.edu.au.

Thank you for your attention and assistance.
.Yours sincerely,

Emeritus Professor Alan Russell
School of Education

> *This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project Number 5102). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au.*

CONSENT FORM FOR PARTICIPATION IN RESEARCH
(by interview)

I …..

being over the age of 18 years hereby consent to participate as requested in the **interview** for the research project on **Assessment for Learning: A School-Based Intervention Study in Singapore.**

1. I have read the information provided.

2. Details of procedures and any risks have been explained to my satisfaction.

3. I agree to audio/video recording of my information and participation.

4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.

5. I understand that:

    *   I may not directly benefit from taking part in this research.

    *   I am free to withdraw from the project at any time and am free to decline to answer particular questions.

    *   While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.

    *   I may ask that the recording/observation be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.

    *   Whether I participate or not, or withdraw after participating, will not effect on my employment.

6. I agree/do not agree* to the tape/transcript* being made available to other researchers who are not members of this research team, but who are judged by the research team to be doing related research, on condition that my identity is not revealed.* *delete as appropriate*

7. I have had the opportunity to discuss taking part in this research with a family member or friend.

Participant's signature…………………………………Date…………………...

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name Rozi Binte Rahmat

Researcher's signature…………………………….. Date………………….

PARENTAL CONSENT FORM FOR CHILD PARTICIPATION IN RESEARCH / CONSENT FORM FOR PARTICIPATION IN RESEARCH
(by focus group discussion and survey)

I …..(parent's name) being over the age of 18 years hereby consent to my child .... (student's name)

participating, as requested, in the **focus group discussions and survey** for the research project on **Assessment for Learning: A School-Based Intervention Study in Singapore**.

1. I have read the information provided.

2. Details of procedures and any risks have been explained to my satisfaction.

3. I agree to audio/video recording of my child's information and participation.

4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.

5. I understand that:

   - My child may not directly benefit from taking part in this research.

   - My child is free to withdraw from the project at any time and is free to decline to answer particular questions.

   - While the information gained in this study will be published as explained, my child will not be identified, and individual information will remain confidential.

   - Whether my child participates or not, or withdraws after participating, will have no effect on his/her progress in his/her course of study, or results gained.

   - My child may ask that the recording/observation be stopped at any time, and he/she may withdraw at any time from the session or the research without disadvantage.

6. I agree/do not agree* to the tape/transcript* being made available to other researchers who are not members of this research team, but who are judged by the research team to be doing related research, on condition that my identity is not revealed. * *delete as appropriate*

Parent's signature …………………………………….. Date …………………….

Participant's signature…………………………………… Date…………………...

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name Rozi Binte Rahmat

Researcher's signature……………………………………..Date…………………….

ACKNOWLEGEMENT OF TRANSCRIBED INTERVIEWS/
FOCUS GROUP DISCUSSIONS

Dear _____

Thank you for participating in the research project on <u>Assessment for Learning: A School-Based Intervention Study in Singapore.</u>

During the interviews/focus group discussions, your sharing and valuable inputs have helped me to better understand the teaching and learning situation in the school.

In order to ensure accuracy, I would appreciate if you could verify that the transcribed interviews/focus group discussions are accurate by signing the verification slip below.

Again, thank you so much for your help. I greatly appreciate the time and assistance that you have provided me.

Best Regards,

Rozi Binte Rahmat
School of Education
Flinders University

_____

I, the participant whose signature appears below, have read a transcript/s of my participation and agree to its use by the researcher as explained.

Participant's signature…………………………………Date…………………...

CONSENT FORM FOR OBSERVATION OF PROFESSIONAL ACTIVITY

I hereby give my consent to **Rozi Binte Rahmat** a research student in the **Faculty of Education** at **Flinders University** whose signature appears below, to record my work activities as part of a study of my professional activities and role.

I give permission for the use of these data, and other information which I have agreed may be obtained or requested, in the writing up of the study, subject to the following conditions:

My participation in this study is voluntary, and I understand that I may withdraw from the study at any time.

SIGNATURES

Participant…………………………………………Date……………………...

Researcher…………………………………………Date…………………….

Appendix B Lesson Observation Form

Teacher: _____ Date: _____ Time: _____ Class: 3__

Subject: Social Studies   Observation No: __

Field Notes	Researcher's views
Did the teacher inform students about teaching objectives/learning goals? Yes/No (delete) If Yes, how was this done?	
Did the student set their learning goals? Yes/No (delete) If Yes, how was this done? Did the student set their learning goals based on the teaching objectives? Yes/No (delete) If Yes, what are the indicators?	
Evidence of interactions between teacher and students about achieving lesson objectives, assessment goals/ standards/ rubrics	
What are the teaching and learning contexts?	
What are the teaching and learning activities?	
Evidence of dialogical communication that showed the use of feedback.	
Evidence of active learning e.g. students engaging in self-regulated learning.	
Is there peer feedback? Yes/ No (delete) Is there feed forward? Yes/ No (delete)	

Evidence of peer feedback conducted/ Evidence of the use of feed forward	
What are the teachers' teaching styles?	
What are the students' learning styles?	
Other observations?	

Validated by _____ (teacher's name and date)

_____ (teachers' signature)

Appendix C Students' Perception of Teaching and Learning Survey (Pre- and Post-Intervention Surveys)

A. **This section is about setting learning goals in Social Studies.**

1. I have been taught how to do goal setting.
2. I know how to do goal setting.
3. Goal setting is not necessary in Social Studies learning.
4. I am responsible for my own learning.
5. My Social Studies teacher is responsible for my learning.
6. My peer/s is responsible for my learning
7. I am able to evaluate my strengths and weaknesses and know what to do, so that I can learn.
8. I know what self-assessment is.
9. I monitor my Social Studies learning progress.
10. I will find out the reason why I did not achieve my Social Studies learning goal.
11. I will seek help from my teacher so that I can achieve my Social Studies learning goal.
12. I will seek help from my peer/s so that I can achieve my Social Studies learning goal.
13. Scoring high marks in Social Studies means I have learnt.
14. If my friend scores higher than me, it is because he puts in more effort in Social Studies.
15. I can score high marks but I still do not understand the Social Studies content taught by my teacher.
16. I have interest in learning beyond what is useful for my Social Studies test/exam.

B. **This section is about how feedback is used in learning.**

17. The feedback I receive helps me to identify the weakness of my Social Studies work.
18. The feedback I receive is about my Social Studies learning goals.
19. The feedback I receive helps me understand why I receive the grade/marks.
20. The feedback I receive tells me what I can do to improve in my current Social Studies work.
21. The feedback I receive tells me what I can do to improve in my next Social Studies work.
22. I received feedback before I hand in my Social Studies assignment.
23. I received feedback while doing my Social Studies assignment.
24. I ask my teacher for feedback and comments if I am only given marks/grade.
25. The feedback I receive motivates me to do well in my Social Studies.

C. **This section is about the quality of feedback in Social Studies.**

26. The feedback I receive from my Social Studies teacher is clearly written.
27. The feedback I receive from my Social Studies teacher can be understood by me.
28. The feedback I receive from my Social Studies teacher is too brief to be helpful.
29. The feedback I receive from my Social Studies teacher is too detailed to be helpful.
30. The feedback I receive from my Social Studies teacher uses language that only my teacher can understand.
31. The feedback I receive from my Social Studies teacher is always on time.

D. **This section is about the value of teacher's feedback in Social Studies.**

32. The feedback I receive is given with reference to the Social Studies assessment criteria.
33. Feedback should be helpful to explain gaps in my Social Studies knowledge.
34. The feedback I receive should identify the mistakes I made in my Social Studies work.
35. The feedback I receive should suggest how I can do better in my Social Studies work.
36. The feedback I receive tells me how I am learning in Social Studies.

45. Feedback given at the end of the Social Studies assignment is useful.
46. Feedback given at the end of a Social Studies test is useful.
48. Feedback is only useful when I receive low marks/grades in Social Studies.
49. I make sure that I read the feedback given by my Social Studies teacher.
50. I make sure that I understand the feedback given by my Social Studies teacher.
51. I make sure I know what to do from the given feedback.
52. In preparing my next Social Studies assignment, I learn from previous feedback I have received.
53. My Social Studies teacher gives positive feedback (Positive feedback tells you what you are doing well).
54. Positive feedback boosts my confidence.
55. I feel demoralized when I receive negative feedback (Negative feedback tells you what you are doing wrong or the mistakes that you made. It tells you that you must in some way change your behavior e.g. putting in effort, so that you will be doing things right).
56. I ignore negative feedback.
57. I ignore feedback that does not tell me how I can do better in my Social Studies work.

E. This section is about peer feedback in Social Studies.

58. I enjoy working with my peers in Social Studies.
59. Working with peer/s is better than working alone in Social Studies.
60. Peer feedback on my ideas and work helps in my Social Studies learning
61. Working with my peer/s will improve my Social Studies grade.
62. I work harder because I do not want my peer/s to think lowly of me in Social Studies.
63. Feedback given by my peer/s in Social Studies can be trusted.
64. My peer's feedback is very confusing.
65. I do not like my peer/s to criticize about my Social Studies work.
66. I value the feedback given by my peer/s in Social Studies.
67. My peers have the ability to give me a good feedback in Social Studies.
68. My peer/s' feedback is useful in improving my Social Studies word.
69. I feel embarrassed to have my Social Studies work marked by my peer/s.
70. I like to offer suggestion to my classmates because I do not want my peer/s to do better than me in Social Studies.
71. I give suggestion to my peer/s to improve their Social Studies work.
72. I feel that feedback about my work should only be given by my Social Studies teacher.
73. I place more value on the feedback I receive from my Social Studies teacher than from my peers.
74. My Social Studies teacher's feedback is more accurate than feedback from peers.
75. With proper training, I can give good feedback in Social Studies.
76. I feel comfortable to give feedback to my friends in Social Studies.
77. Being assessed by my peer/s makes me lose face.

Appendix D Phase One Focus Group Discussion Questions for Students, Interview Questions for Teacher Participants and Other Participants

Phase One Students Focus Group Discussion Questions.

Learning goals
1. Do you know what is learning goals and self-regulated learning?
2. How do you set learning goals or how have you use learning goals in your Social Studies?
3. Have your Social Studies teacher set learning goals with you in your class?
4. How is that done?
5. Now that you have learnt how to set learning goals, do you think it is useful to help you learn better in Social Studies? Can you explain your answer?
6. Is scoring high marks in Social Studies important? Why?

Self-regulated learning
7. What do you think is the job of your Social Studies teacher in helping you learn?
8. Between your teacher and yourself, who is more responsible in ensuring that you learn in Social Studies? Why?
9. Can you explain to me what is self-assessment?
10. How do you monitor your Social Studies learning?
11. How do you know that you have learnt?

Definition and elements of successful learner
12. What is your definition of a successful Social Studies learner?
13. What are the features of a successful Social Studies learner?

Feedback
14. How often do you see your Social Studies teacher to seek help? Why?
15. Do you find the written feedback given to you by your Social Studies teacher useful? Why?
16. How have you use the written feedback given to you to improve in Social Studies?
17. Do you read previous feedback before you do your next assignment or sit for the next test? Why do you do that?
18. What kind of improvements do you want to see to improve the quality of the written feedback given to you by your Social Studies teacher?

Peer feedback
19. How do you think your peers can help you to learn better in Social Studies?
20. Have you used peer feedback in your Social Studies class?
21. Did you enjoy it? Why?
22. Peer feedback will involve your peers criticizing your work. How do you feel about that?
23. Do you think peer feedback is useful strategy to learn Social Studies? Why?
24. What can be done to make peer feedback effective?
25. Do you prefer teachers' feedback or peers' feedback? Why?

Phase One Teacher Interview Questions.
Beliefs
1. What do you think are the roles of teachers in student learning?

2. What do you think are the roles of students in their learning?
3. Can you share your beliefs about how your Social Studies students learn?
4. How would you describe a successful learner/student?
5. How would you describe a successful teacher?

Current Knowledge on assessment for learning
6. Can you share with me how you use assessment in teaching and learning?
7. Can you share with me what do you understand about assessment for learning or formative assessment?
8. How often do you use assessment for learning in your classroom? Please give examples when you use assessment for learning in your classroom.
9. What factors do you think influence the use of assessment for learning?
10. Can you suggest changes or support that you will need so that you can use assessment for learning in your teaching?
11. Do you think our students are self-regulated learners?
12. If no/yes, what do you think are the reasons that contribute to our students being that way?
13. Have you used goal setting? (Ensure that teacher know what is goal setting and not target setting).
14. If yes, do you think it is effective? (If no, why don't you use goal setting? What are the issues that prevent you from using goal setting?)

Feedback
15. What do you think are the aims of feedback?
16. How have you use feedback in teaching and learning?
17. What do you think make a good feedback?
18. How do you feel if teachers write only written feedback instead of giving marks?
19. What do you think are the challenges when using feedback?
20. How do your students respond to the feedback given?

Peer Feedback
21. Have you use peer feedback in your teaching and student learning?
22. Do you see value in using peer feedback in your class?
23. What do you think make a good peer feedback?
24. What do you think are the perceptions of your students in regard to peer feedback?
25. Are there ways to change such perceptions about peer feedback?
26. What do you think are the challenges when using peer feedback?
27. What can be done to make peer feedback successful?
28. What do you think are the factors that can sustain the use of feedback in teaching and learning over time?

Classroom Assessment Practices and Teaching and Performance Orientation
29. Describe your teaching style?
30. Are students told how well they have done in relation to others in the class?
31. Is your next lesson objectives determined more by the prescribed curriculum than by how well students did in the last lesson?
32. Are students given opportunities to decide their own learning objectives?
33. What do you consider the most worthwhile assessment?
34. How have you provide guidance to help students assess their own learning?
35. Are students given opportunities to assess each other's work?
36. Have you provide guidance to help students assess each other's work? How do you do that?

Comparing Teachers' Assessment Values and Practices

37. Do you discuss with your students ways to improve learning e.g. how to learn?
38. How do you help your students to plan the next step in their learning?
39. Are students help to think about how they learn best? How do you do it?
40. Do you think your assessment practices help students to learn independently?

Making Learning Explicit

41. How do you help your students to find ways of addressing problems they have in their learning?
42. How do you discuss students' learning goals/objectives with your students?
43. Do you find it necessary to help students understand the learning purposes of each lesson or series of lessons?
44. Are students encouraged to view mistakes as valuable learning opportunities (performance vs. learning oriented learners)?
45. Are students told how well they have done in relation to their own previous performance?
46. Did you help to identify students' strengths and advise them on how to develop them further?
47. Do you agree that students' errors are valued for the insights they reveal about how students are thinking?
48. Do you agree that assessment provides you with useful evidence of students' understandings, which both you and your students can use to plan subsequent lessons?

Phase One Principal Interview Questions.

1. What is the school's stand on the use of assessment for learning?
2. Do you think our students are ready for assessment for learning?
3. What kind of support do you think the school can render to teachers who are interested to use assessment for learning in their teaching?
4. Do you think our teachers are prepared to try assessment for learning?
5. What are the challenges that school leaders faced in implementing new innovation?
6. Do you see problems coming from the younger teachers or the experienced ones?
7. What do you think are the future direction of the school in integrating assessment for learning in teaching and learning?

Phase One Humanities Head of Department Interview Questions.

1. What is the Department's stand on the use of assessment for learning?
2. How does the Department inculcates self-regulated learning, self-assessment, feedback and peer feedback?
3. What support does the Department rendered to teachers who are interested to use assessment for learning strategies in teaching?
4. Are the teachers prepared to use assessment for learning strategies in their teaching?
5. What are the challenges that middle management faced in implementing assessment for learning?
6. What is the future direction of the school in integrating assessment for learning in teaching and learning?

Phase One National Institute of Education Interview Questions.

1. Who determines the selection of the pre-service teacher training module for Social Studies in particular modules related to assessment?
2. How are these Social Studies assessment modules selected? What are the determinants or criteria used for choosing a particular assessment module for the pre-service teacher-training program?
3. The National Institute of Education conducts in service courses for teachers, are there courses related to assessment for learning? If no, why is that so? If yes, what is the take up rate and the kind of follow up done after the course?
4. How are trainee teachers/or teachers in general trained to conduct assessment in schools?
5. QCL 552: Assessment and Reflective Teaching in Social Studies focuses on assessment of learning. Is there any module/course to equip trainees with assessment for learning? If no, why? If yes, how will this module help trainees/teachers in using assessment for learning?
6. Do you agree that the training received (pre and in service), will influence how our teachers use assessment to assess students? Is it fair to say that Social Studies teachers ended up using a lot of assessment of learning because they are not adequately exposed to assessment for learning during their training?
7. Do you think there is a place for assessment for learning in Social Studies in Singapore?
8. What are the challenges/barriers teachers might face if they want to use assessment for learning in classroom?
9. Do you think our teachers are equipped with assessment for learning skills to use them in the classroom?
10. Assessment of learning is definitely here to stay in Singapore, because of the high accountability culture and Ministry of Education's stand to have a standardized yet reliable form of assessment when it comes to categorizing students. Do you think

assessment for learning can be integrated to assessment of learning? How do you think this can be done?

11. Allow me to use one of the Social Studies' concept, 'Changing Time, Changing Needs and Changing Policy' (taken from Chapter 2 in the Secondary 3 Social Studies textbook on Good Governance), based on this, appreciate if you can share with me, the future direction of pre-service teacher training courses with regards to assessment for learning?

Appendix E Samples of Written Assignments from Classes 3X and 3Y

Phase One Sample of Student's Work Collected from 3X.

Humanities/ Social Studies Department
Secondary Three Express

Name:	Marks:	5/10
Class:	Date: 08.02.11.	

Section A: Source Based Questions [10marks]

Source A: An extract from "Park and Ride' causing another kind of jam', The Straits Times in September 2009.

> Under the 19-year-old Park-and-Ride scheme, motorists park their cars at a carpark on their route to work, and then catch a bus or train the rest of the way. About 4,000 Park and Ride sets are available for sale each month, with parking spaces spread across 36 carparks. However, only about a third of these spaces are taken up, and demand is not uniform. Checks by The Straits Times indicate that demand is high among car owners living in the north, largely because of the congested Central Expressway and drivers having to pass through three Electronic Road Pricing (ERP) gantries to get to town.

1.   What does the source tell you about the Park-and-Ride scheme today? (5)

Source A is an extract from a news report. It can be inferred that the Park-and-Ride scheme is not popular as "only a third of these spaces are taken up...". It can also be inferred that motorists only use the scheme when in conjuction with the ERP gantries. It can be shown as "that demand is high among car owners living in the north... having to pass through three Electronic Road Pricing (ERP) gantries".

Phase One Sample of Student's Work Collected from 3Y.

5/9

How do the following principles lead to good governance in Singapore? leadership is key and anticipate change and stay relevant.

→ Good governance means having a fair and equal system of ruling. #A good governance must also bring progress for country.

leadership is key to good governance. This is because with capable leaders, they are able to bring the country to progress. With capable leaders, they will be able to meet the citizen's needs. A leader should also do what is right and not what is popular but wrong. # Good leadership can lead the people and make wise decisions. Also, there will be less corruption and the government will gain the respect of the people. In a country with corruption there is no fairness and Meritocracy is not present. In singa when meritocracy is present in the country, there will be less conflicts and hence can bring progess to the country. Hence, leadership is key to good governance.

→ The world is always changing and to keep up with times, we have to be open minded. #In order for the country to progress, we have to learn new ways and accept change. A country cannot progress if its people are happy with what they have. Also, we have to stay relevant with the world, so that we will not fall behind other countries. We also have to learn new ways to counter both existing and future problems. Therefore, anticipating change and staying relevant can lead to good governance because it will bring the country forward.

3/6

how?

9/1.

Appendix F : The 'Move Analysis' Used in Categorising Written Feedback .

There are twelve moves suggested by Mirador (2000). The specific moves and description are given alongside the examples extracted from the teacher participants' written feedback. However, there are additional moves that are added pertaining to Social Studies marking from Point 13 onwards.

1. General Impression (GI): adjectival in nature; usually created as an overview statement; states in general how teacher perceives the assignment; comment can cover both content and skill. E.g. "Great job! Good paragraphing."

2. Recapitulation/ Referencing (RR): states what students have achieved in their work in terms of skills and knowledge; often 'sectional' in approach. E.g. You have managed to apply the structure as well as made appropriate inferences with the right evidence."

3. Suggesting Improvement (SI): recommends specific steps/action on how assignment can be improved. E.g. "When you write factor of comparison, make sure that it is relevant for both sources and is mentioned in both sources. Also, your factor of comparison has to be specific. If you are talking about impact, what kind?"

4. Highlighting Strengths (HS): citing skills or content that showed strengths. E.g. "Good job! Inference and purpose were very clear and appropriate. Keep up the good work."

5. Calling Attention to Weakness: identifies the weak points. E.g. "You have not interpreted the source correctly. Are you the audience? This source is for British citizens, so should you be using 'we'?"

6. Affective Judgement (AJ): personal in approach; affirms an idea or choice adopted by student. E.g. "I should not have to match your inference to evidence. Organise!"

7. Exemplification (EX): citing of examples to elaborate on comment. E.g. "Your comparison is supposed to be on content and content differs so you need to state what exactly it is about content that you are comparing. Also comparison based on tone and purpose is two different things."

8. Evidentiality (EV): citing of facts or pieces of evidence to stress a point previously made. E.g. "The handcuff represents the British oppressing the Catholics and not the Catholics keeping the British out!"

9. Juxtaposition (JU): comment generally aimed at suggesting improvement for assignment. E.g. "Answer is well explained but remember you are constrained by time, so go straight to the point."

10. Positivising (Pos): a seemingly positive comment usually found between two negative ones. E.g. "Your evidence needs to support your factor of comparison. Good job with the factor of comparison. Also tone is different from purpose."

11. Probing (Pr): posing of questions to lead student to probe into an idea. E.g. "Why is the poster showing a hand throwing the medicine away?"

12. Overall Judgement (OJ): summing-up idea. E.g. "Well done! Please always write your essay with this spirit. Way to go!!!"

13. Indicate marks (IM): indicates the marks the student is awarded. E.g. 5 marks.

14. Indicate levels (IL): indicates which level the students achieved based on the performance standards checklist rubrics. E.g. L2.

15. Level/Marks (LM): indicates the level and marks students are awarded. E.g. L1/1.

16. Overall marks (OM): indicates overall marks. E.g. 9/20 marks.

17. Calling attention to Weakness using a word: Identify the weak points. E.g. how, why.

18. Symbols such as question mark, ticks, crosses and exclamation mark: Identify confusion. E.g. ?, !.

Given factor: social segregation
Other possible factors: declining economy, political reform
An explanation is a linking factor to: Impact of direct outcomes

To what extent was social segregation the most significant impact of the Northern Ireland conflict? Explain your answer.	[12]
L1	**Writes about the topic without addressing question**	**1-2**
	The war in NI is another example of a civil war where the conflict has lasted for over 30 years. Over 3600 people lost their lives while many more have been injured as a result of this conflict.	
L2	**Describes given factor or/and other factors**	**3-4**
	Social segregation	
	Because of the conflict, thousands of people were killed. This atmosphere of tension and violence has resulted in social segregation of the two communities. The Protestants and Catholics have been segregated socially in the way they live, work and play. It is even possible that a young person in Northern Ireland has not met someone from the other community.	
	Declining economy	
	Due to the destruction caused by the conflict, domestic and foreign direct investments have been adversely affected. Foreign-owned factories closed down when the violence increased operating costs in Northern Ireland. The constant threat of bombings and high cost of security drove away large numbers of foreign manufacturers. In addition, tourism has declined as the violence has frightened tourists away as well.	
	Political reform	
	Political reforms were introduced after the civil rights marches put pressure on the NI govt to pass anti-discrimination measures in NI. Following further civil rights demonstrations and pressure from Britain, the government announced sweeping reforms of the local govt in NI. It has also led to foreign interference. In the early days of the conflict, the IRA received supplies, guns, shelter and money from Irish sympathizers in the Republic of Ireland and other countries. In 1985, Br and the Republic of Ireland signed an agreement that gave the Republic of Ireland greater influence in NI by setting up a joint committee to discuss matters such as security, justice and law in NI, much to the dismay of the Protestants. Br troops were also sent to restore peace in 1969.	

L3	**Explains given factor or other factors**	5-6
	Social segregation	
	Because of the conflict, thousands of people were killed. This atmosphere of tension and violence has resulted in social segregation of the two communities. The Protestants and Catholics have been segregated socially in the way they live, work and play. It is even possible that a young person in Northern Ireland has not met someone from the other community.	
	Explanation: The children of both sides, growing up with the racial or religious prejudices of their parents, retain and perpetuate the hostility they have for the rest of their lives. This led to the lack of understanding between the two groups. Deepened hostility. More hatred and distrust. Peaceful solutions even harder to achieve.	
	Declining economy	
	Due to the destruction caused by the conflict, domestic and foreign direct investments have been adversely affected. Foreign-owned factories closed down when the violence increased operating costs in Northern Ireland. The constant threat of bombings and high cost of security drove away large numbers of foreign manufacturers. In addition, tourism has declined as the violence has frightened tourists away as well.	
	Explanation: As a result, the economy stagnated and unemployment rose steadily.	
	Political reform	
	Political reforms were introduced after the civil rights marches put pressure on the NI govt to pass anti-discrimination measures in NI. Following further civil rights demonstrations and pressure from Britain, the government announced sweeping reforms of the local govt in NI. It has also led to foreign interference. In the early days of the conflict, the IRA received supplies, guns, shelter and money from Irish sympathizers in the Republic of Ireland and other countries. In 1985, Br and the Republic of Ireland signed an agreement that gave the Republic of Ireland greater influence in NI by setting up a joint committee to discuss matters such as security, justice and law in NI, much to the dismay of the Protestants. Br troops were also sent to restore peace in 1969.	
	Explanation: Increased tensions and fighting in the province with many Catholics seeing the British soldiers as being occupiers.	
L4	**Explains given factor and identifies/describes other given factor(s)**	7
	L3 (given factor) + L2	
L5	**Explains given factor and other factor(s)**	8-10
	Do not award 10 marks if there are no more than 2 given factors At least two factors in L3	
L6	**Show relative importance of factors** To conclude, segregation of society is the most significant impact of the conflict. This is because it is long term in nature as compared to political reform. To elaborate, even after political reform like the abolishing of the unfair voting system, the conflict didn't stop as mindset of the Protestants and the Catholics of each other is still hostile and intolerant. The segregation of the society involves the mindset, heart and will of the people. Political reform, on the other hand, is more superficial and could not solve deep rooted problems like hostility among the communities.	11-12

Performance Standards Checklist Rubrics on Case Study of Northern Ireland – Consequences for Students

	To what extent was social segregation the most significant impact of the Northern Ireland conflict? Explain your answer.	[12]	Tick
L1	**Writes about the topic without addressing question**	**1-2**	
L2	**Describes given factor or/and other factors** Social segregation, Declining economy, Political reform	**3-4**	
L3	**Explains given factor or other factors** Social segregation: Explanation: The children of both sides, growing up with the racial or religious prejudices of their parents, retain and perpetuate the hostility they have for the rest of their lives. This led to the lack of understanding between the two groups. Deepened hostility. More hatred and distrust. Peaceful solutions even harder to achieve. Declining economy: Explanation: As a result, the economy stagnated and unemployment rose steadily. Political reform: Explanation: Increased tensions and fighting in the province with many Catholics seeing the British soldiers as being occupiers.	**5-6**	
L4	**Explains given factor and identifies/describes other given factor(s)** L3 (given factor) + L2	**7**	
L5	**Explains given factor and other factor(s)** *Do not award 10 marks if there are no more than 2 given factors* At least two factors in L3	**8-10**	
L6	**Show relative importance of factors** To conclude, segregation of society is the most significant impact of the conflict. This is because it is long term in nature as compared to political reform. To elaborate, even after political reform like the abolishing of the unfair voting system, the conflict didn't stop as mindset of the Protestants and the Catholics of each other is still hostile and intolerant. The segregation of the society involves the mindset, heart and will of the people. Political reform, on the other hand, is more superficial and could not solve deep rooted problems like hostility among the communities.	**11-12**	

Performance Standards Checklist Rubrics on Case Study of Sri Lanka – Causes for Students

Name: _____ ( ) Class: _____ Date: _____
Title : <u>Peer Marking- Case Study of Sri Lanka- Causes of conflict</u>

	Do you agree that the Ceylon Citizenship Act of 1948 was the most significant cause of conflict in Sri Lanka? Explain your answer. [13]		
L1	**Writes about the topic without addressing question (ONE aspect)**	**(1)**	
L1	**Writes about the topic without addressing question (at least TWO aspects)**	**(2)**	
L2	**Describes given factor or/and other factors (Citizenship OR any ONE factor)**	**(3)**	
L2	**Describes given factor or/and other factors (Citizenship OR any ONE factor- substantial details)**	**(4)**	
L2	**Describes other factors (at least TWO other factors)**	**(4)**	
L3	**Explains given factor (Citizenship) (ONE detail & showing this factor had caused conflict)**	**(5)**	
L3	**Explains given factor (Citizenship) (TWO details & clearly showing this factor had caused conflict)**	**(6)**	
L3	**Explains given factor (Citizenship) (at least TWO details & explained beyond doubt this factor had caused conflict)**	**(7)**	
L3	**Explains other factor/s (Sinhala Only, Uni Adm, Resettlement) (ONE detail & showing this factor had caused conflict)**	**(5)**	
L3	**Explains other factor/s (Sinhala Only, Uni Adm, Resettlement) (TWO details & clearly showing this factor had caused conflict)**	**(6)**	
L3	**Explains other factor/s (Sinhala Only, Uni Adm, Resettlement) (more than TWO details & explaining beyond doubt this factor had caused conflict)**	**(7)**	
L4	**Explains given and other factor** *Do not award 10 marks if there are no more than 2 given factors.* At least two factors in L3. **(General explanations)**	**(8)**	
L4	**Explains given and other factor(s)** *Do not award 10 marks if there are no more than 2 given factor.* At least two factors in L3. **(Substantive explanations)**	**(9)**	
L4	**Explains given and other factor(s)** *Do not award 10 marks if there are no more than 2 given factors.* At least two factors in L3. **(Quality explanations that proven beyond doubt)**	**(10)**	
L5	**Show a balanced viewpoint of explained factors** In conclusion, I agree that the citizenship act was most significant in causing conflict in Sri Lanka. As a result of the act, thousands of Tamils were affected. In losing their basic rights such as education, jobs, housing and voting, they suffered politically, economically and socially. The negative impact on the Tamils was more wide-ranging as compared to the University Criteria Admission rights which directly affected mainly only the economic prospects of the educated Tamils. The citizenship act was thus most significant in driving the conflict.	**(11-13)**	

(note at right, spanning L4 rows: Citizenship + 2 other factors)

Comments : _____
_____

Appendix H Peer Feedback Lesson Plan

Prior Knowledge: 1. Teacher has gone through the LORMS for essay questions in the previous lesson.
                2. Students have completed reading the causes of conflict in Sri Lanka, sat for the causes of conflict test and completed the
                    SEQ on Sri Lanka's conflict.
                3. Students to be seated in groups before the teacher enters the class.

Materials to be distributed to the students: 1. Each group will have 3 essays (One essay for each student) not belonging to the student.
                                  2. Peer Feedback Activity Checklist (one for each student) + Peer Feedback Form (one for each
                                    student) + SWA worksheet (one for each student).

Materials to be ready by teachers: 1. Laptop with Sri Lanka Peer Feedback Activity PPT.
                              2. An alarm bell or any loud voice to be used every 15 minutes to alert the students of time.

Steps of the Lesson: Learning Activities and Key Questions	Expected Student Reactions or Responses	Teacher's Response to Student Reactions/Things to Remember	Assessment
Introduction (3 minutes) Teacher to disseminate all the materials to the students & get the laptop ready.	Students might be talking about the use of the materials and what it is for. Noise level may go up. This will trigger their curiosity.	1. Calm the students. 2. Allow students to be curious with the worksheets because this will trigger them to think about the activity.	Are these common responses for all students? Does this create negative or positive reaction?

Phase 1 (7 minutes)
 Teacher to show PPT slides to explain to the students what they will be doing for the peer feedback activity.
     1. Go thru advantages of peer feedback activity.
     2. Inform the students the Learning Goals for today's lesson.
	Students might be sceptic towards the activity.
	 Students might not be ready to feedback their peers' essays.
		1. Assure the students that the activity will benefit them as they will understand how marking is done and be able to be fully aware of the	Are students listening and have understood how the lesson will proceed?

3. Instruct students to write the Learning Goals or customized their own Learning Goals.	Students might be confused as to what to expect for this activity.	requirements that they can use while writing the essay themselves.	
4. Check to make sure that all students received the worksheets.		2. It is good to identify a group leader to ensure admin matters are settled.	
5. Explain the peer assessment worksheet and how it works. Basically, it helps students to see the structure of the essay. Reiterate to the students that the checklist is from the LORMS. The worksheet is a guide to the students on how the teacher's mark.	Students might be missing the worksheet. Noise level may increase due to uncertainty.	3. Refocus the students' attention that the worksheets are to help them stay focus and to guide them and are not a chore.	
6. Instruct the students that as they mark they should be filling the SWA worksheet at the same time. They can write in point form. These worksheets will be graded. Marks awarded will be based on the quality of feedback and how clear and helpful the suggestions made.		4. Instruct students that worksheets should be completed concurrently as they peer mark. Important to tell the students that grade given for the SWA will be based on a. clarity, b. usefulness in improving the original essay and c. accuracy in identifying the strengths and weaknesses.	Have student understood the marking criteria?
7. Explain that peer feedback form should be completed at the end after all the essays have been marked.	Students might be daunted with so many worksheets to complete.	5. Important for teacher to alert students every 15 minutes to help students manage time.	
8. Caution the students on the importance of time management because they have 15 minutes for each essay. So a total of 45 minutes to peer mark 3 essays and complete all the worksheets.	Students might get carried away focusing on one essay.	6. Teacher to walk around and monitor to ensure quality.	
9. An alarm bell will be rung every 15 minutes for students to manage their time.			

10. Remind students that they should be task oriented and that no extra time will be given to complete their task and that their marks might be affected if they are not able to complete their task.	Quality of marking might be compromised.		Have the student understood about the importance of time management?
Main Task (45 minutes) 1. Teacher to start on the first bell alarm. 2. Monitor students' discussion. 3. Avoid interrupting the discussions and offering opinion because this might relates to the students as lacking in trust. However, walk around to show that students can get your support any time they need.	Students might be calling for help all the time.	Listen to the questions and encourage the students to make decisions without influencing their decision. Assist students if they are out of the way but always ask the other peer members to offer their ideas first.	Are students talking about the essays? Are students discussing based on the LORMS? Are students making collaborative decision?
Debrief/Reflection (5 minutes) 1. Teacher can either end the lesson by: a. Debrief of what she observed during peer feedback and instruct the student to complete their reflections at home OR b. Instruct the students to complete the reflection in class and teacher to complete debrief in the lesson in the next lesson.	Students might find that there are so much to do and laments.	Teacher's discretion on whether to do a. OR b. depending on students' situation at the time.	Can students reflect on the advantages of the peer marking activity? Did students reinforce their content and skills on the causes of Sri Lanka's conflict?

Appendix I Peer Feedback Worksheets for Students: Marking Rubrics, Performance Standard Checklist and Strengths, Weaknesses and Areas for Improvement (SWA) Form

Name: _____ (   )   Class: _____   Date: _____

Title: The following are the consequences of the Northern Ireland conflict.
1. Social Segregation; 2. Political Reform; 3. Declining Economy
Which has the most significant impact on the people of Northern Ireland? (12)

LORMS	Descriptors	Marks	Tick
L1	**Writes about the topic without addressing question (ONE aspect)**	**(1)**	
L2	**Describes given factor - Social Segregation** *Students can be awarded a higher mark if 2 or more given factors are described*	**(3)** **(4)**	
	Describes given factor - Political Reform *Students can be awarded a higher mark if 2 or more given factors are described*	**(3)** **(4)**	
	Describes given factor - Declining Economy *Students can be awarded a higher mark if 2 or more given factors are described*	**(3)** **(4)**	
L3	**Explains given factor (Social Segregation/Political Reform/Declining Economy)** delete where applicable **(ONE detail & showing this factor had impact the people)**	**(5)**	
	Explains given factor (Social Segregation/Political Reform/Declining Economy) delete where applicable **(TWO details & clearly showing this factor had impact the people)**	**(6)**	
	Explains given factor (Social Segregation/Political Reform/Declining Economy) delete where applicable **(at least TWO details & explained beyond doubt this factor had impact the people)**	**(7)**	
L4	**Explains 2 other factors** *Do not award 10 marks if there are no more than 2 given factors. At least two factors in L3.* **(General explanations)**	**(8)**	
	Explains 2 other factors *Do not award 10 marks if there are no more than 2 given factors. At least two factors in L3.* **(Substantive explanations)**	**(9)**	
	Explains 2 other factors *Do not award 10 marks if there are no more than 2 given factors. At least two factors in L3.* **(Quality explanations that proven beyond doubt)**	**(10)**	
L5	**Show a balanced viewpoint of explained factors** To conclude, segregation of society is the most significant impact of the conflict. This is because it is long term and deep seated in nature as compared to political reform or the declining economy. As for the declining economy, the Protestants are not severely affected unlike the Catholics. So the repercussions of the economic decline only affected a small pocket of the people in Northern Ireland basically the Catholics and not the Protestants. To elaborate further, even after political reform like the abolishing of the unfair voting system, the conflict didn't stop as mindset of the Protestants and the Catholics of each other is still hostile and intolerant. The segregation of the society involves the mindset, heart and will of the people. Political reform, on the other hand, is more superficial and could not solve deep rooted problems like hostility among the communities.	**(11-12)**	

Comments: _____
_____
_____

PEER FEEDBACK CHECKLIST & SWA

Name: _____ (   )   Class: _____   Date: _____

The following are the consequences of the Northern Ireland conflict:1. Social Segregation; 2. Political Reform; 3. Declining Economy
Which has the most significant impact on the people of Northern Ireland? (12)

Review your peers' essay/s using the following checklist & SWA as your guidelines.

	Areas to focus	Tick	Comments
1	Can you identify the following factors?		
	Social Segregation		
	Political Reform		
	Declining Economy		
2	Level 1 Do you think the writer writes about the topic without addressing the question?		
3	Level 2 Do you think the writer only describes the factors?		Areas for Improvement
	Social Segregation		
	Political Reform		
	Declining Economy		
4	Level ¾ Do you think the writer explains the factors and answered the question?		Strengths
	Social Segregation		Weaknesses AFIs

	Political Reform		Strengths Weaknesses AFIs
	Declining Economy		Strengths Weaknesses AFIs
5	Level 5 Do you think the writer shows a balanced viewpoint or the explained factors?		If yes, what are the evidences? If no, what are the evidences?

Give a Tick ☑ or a Cross ☒

Appendix J Phase Three Focus Group Discussion Questions for Students, Interview Questions for Teacher Participants

Phase Three Interview Questions for Teachers

Effectiveness of workshop

1. You have attended the workshops in March, June and PLC sessions, how have these helped you to understand about assessment for learning strategies?

Changes in Teaching and Learning after AFL

2. Now that you have more or less known about AfL in particular, self-regulated learning, peer feedback, how have these changed your views about the role of teachers in student learning and students' role in their learning?

3. Can you share your views about how your students learn now, with the introduction of AfL strategies like self-regulated learning and peer feedback?

4. Have assessment for learning strategies changed the way you teach?

5. What factors do you think influence the use of assessment for learning?

Marking

6. Is the quality of your marking, better with the introduction of the marking LORMs and the checklist?

7. Are there any improvements that you can suggest to make the quality of your marking even better for students to learn about their strengths and weaknesses?

Reflection Booklet

8. Do you think our students are self-regulated learners now that we have introduced the Reflection Booklet?

9. How have you used the Reflection Booklet to provide guidance to help students assess their own learning or plan and improve their learning?

10. How have you used the Reflection Booklet as a form of feedback to your own teaching?

11. Do you think you are able to diagnose students' learning as compared to before using the Reflection Booklet?

Peer Feedback

12. Now that you have tried using peer feedback as part of your classroom instructions, do you see value in using peer feedback in your class?

13. What do you think are the perceptions of your students with regard to peer feedback?

14. Do you think the students learn better when you use AfL activity such as peer feedback?

15. What do you think are the challenges when using peer feedback and how can you overcome such challenges?

16. What do you think are the factors that can sustain the use of peer feedback in teaching and learning over time?

17. What do you think are the students learning outcomes after using AfL strategy such as peer feedback?

Sustainability

18. Have you used these AfL strategies like peer feedback or setting LG with your other classes?

19. What benefits or success factors do you think teachers and students have gained when using AfL strategies?

20. What are the challenges you faced when using AFL strategies and how are these challenges solved?

21. What do you think are needed to sustain the long term survival of AfL strategies in this school?

Phase Three Focus Group Discussion Questions

How do you learn now? Are you a self-regulated learner?
1. Has your learning strategies been different since the workshop in Term 1, the introduction of SDL booklet, peer feedback & the new written feedback by your teacher? What has been good and what has been bad?

2. How is it different now when it comes to monitoring your own learning? Does the setting of learning goals by your teacher and yourself help you to evaluate your learning?

3. How does the SDL booklet help you to monitor your own learning?

4. Do you think you are more of a self-regulated learner now that you are aware of what you don't know and what you know?

5. Other than evaluating your learning using the SDL booklet, what other advantages or disadvantages that you faced when using this booklet?

6. Will you evaluate/review/reflect your learning if we scrap the SDL booklet? How will you then evaluate how much you have learnt it? Will it be effective?

How do you reinforce learning?
7. Do you collaborate/discuss with your peers to help you learn content or skills?

8. Has your perception on peer feedback learning changed now that you have gone thru 2 sessions about peer feedback?

9. What are the advantages and disadvantages of receiving peer feedback now that you have gone through 2 sessions of it?

10. Do you take advantage of your peers' experience and knowledge? How is this different as compared to before?

11. Peer feedback involves criticizing your peers' work. How do you feel about this?

Marking
12. Do you think your teacher give better written feedback now?

13. Do you read this written feedback by your teacher now?

14. Do you want such practice to continue? Why?

15. Will you continue doing what we are doing in Term 3? Let's start with self-regulated learning, will you evaluate your learning in more detail even though your teacher does not do it in class? Will you do it willingly? How about peer feedback? If you teacher does not structure it in class, will you do it among your friend?

Appendix K   Phase Four Focus Group Discussion Questions for Students, Interview Questions for Teacher Participants

Phase Four Students Focus Group Discussion Questions.

Evidence of teacher/student using assessment for learning strategies
1. Can you describe to me, a typical Social Studies lesson from Term 4 in 2011 to the current time in 2012? (3E/G will only reflect on Term 4 due to a change in teachers).
2. Can you describe to me your actions/reactions based on a typical Social Studies lesson that you undergo now?
3. Have your Social Studies teacher used the SDL/reflection, PF and written feedback checklist in Term 4 until now? Why do you think your teacher did not use these strategies during SS?
4. How do you feel when your teacher is not using them anymore?
5. Are you using any of the strategy that have been taught or used last year in your Social Studies learning on your own? Why is that so?

Evidence of students self-regulating their learning
6. It is noted that the Social Studies teaching objectives for each lesson has not been stated, and no time given to students to set their learning goals. How would you know that you have learnt or whether you have understood the lessons?
7. Why do you think your SS teacher did not write her teaching goals on the board?
8. By not writing the teaching goals, is formulating the learning goals an issue for you
9. Did you do any reflection? Will it affect your learning?
10. How do you monitor your own learning now?
11. Are you a self-regulated learner now?

Reasons why teaching and learning practice change
12. Why do you revert to the old style of learning?
13. Why do you think your teacher reverts to the old style of teaching?

Evidence of using peer feedback and its effect on teaching and learning
14. Do you want to do peer feedback? Why?
15. Do you think you have lost or gained learning opportunity for not doing peer feedback?
16. Did you do any peer feedback among yourself informally?
17. Do you exchange knowledge with your peers or collaborate for example exchange feedback on assignments? How is this different as compared to before?

Evidence of using checklist rubrics and its effect on teaching and learning
18. Describe what did you see when you received your marked assignment/test? That means when you received your papers, how was it being marked?
19. How do you find the marking now?
20. Is the checklist being used? Why?
21. By not giving or using the checklist, how will this affect your learning?

Reasons why assessment for learning strategies not used and factors that could sustain assessment for learning strategies
22. What could be the reasons for you not to use these strategies?
23. What do you think can be done to encourage you to use these strategies?

Phase Four Teacher Interview Questions.

<u>**Evidence of teacher changing their teaching practice to incorporate assessment for learning strategies**</u>

1. Can you tell me what are the changes you have made in your Social Studies teaching practice since Term 3 2011?
2. Did you use the checklist/peer feedback/reflection and setting learning goals?

<u>**Factors that contributed to sustaining assessment for learning strategies**</u>
3. How would you measure the success rate of sustaining assessment for learning strategies in your classroom?
4. Do you think if you the continual use of assessment for learning strategies after Term 3 could increase the success rate or sustainability?
5. What factors can you suggest to sustain the use of assessment for learning strategies?
6. What are the challenges that you faced in continuing using assessment for learning strategies?
7. What do you think is the future of assessment for learning strategies in Singapore? How can we change the mentality of stakeholders to embrace assessment for learning strategies?
8. What do you think make effective professional learning?
9. Students become dependent on the teachers because teachers allow students to be dependent on them. Do you think the way our students learn (being self-regulated or self-directed) would depends on whether the teacher herself used AFL in teaching?
10. Is there a way to balance assessment for learning and assessment of learning in Singapore?

Appendix L Reflection Booklet Codebook

Coding
Action taken to close learning gap Students have indicated that they will take action to address learning gaps (Evidence of feed forward/ What I am going to do?). For e.g. students stated that they would review the mistakes that they have made, to do better in the next assignment; students would heed the feedback/comments given; students indicated that they would improve on their work e.g. write better explanation instead of mere description; students indicated that they would read more assessment books/essays to pick up writing skills; students acknowledged that they would be able to make changes based on the given feedback; students gave the assurance that they would take steps to avoid committing the same mistake; students stated that they were committed to work harder on their explanation skill; students stated that they would grade their own essay to be familiar with the performance standards checklist rubrics to improve their understanding on performance standards.
Learnt content/skills and knew how to avoid making same mistake Students have indicated that they have learnt during peer feedback activity. For e.g. students have learnt about writing skills and were aware of what to avoid when writing essay; students learnt not to 'cut and paste' content from textbook in their essay; learnt to avoid making the same mistakes their peers made in their essays; students learnt to be careful in preparing their work; students learnt how to give good explanation/elaboration/conclusion; students learnt how to link the explanation to the question; to answer the essay question and not mere description; write better; able to spot own mistakes such as factors that have been missed out; to write appropriate length of essay; learnt to mark accurately and to identify LORMS and criteria for success.
Performance standards checklist rubrics guided students during peer assessment Students have indicated that the rubrics/LORMS/SWA worksheets have guided them how to mark. For e.g. students understood the criteria for success; rationalised the scores that they have given based on the LORMS/rubrics; the rubrics/LORMS has been useful in providing clear indicators during peer feedback activity; rubrics/LORMS/SWA gave students an idea of their current competency and what they needed to do to reach the highest competency level; SWA worksheet has helped students to give specific and clear feedback.
Identified peers' weaknesses and strengths Students have indicated that they are able to identify their peers' mistakes/strengths of the essay during the peer feedback activity. For e.g. essays without explanation/clear elaboration; lacking in sufficient evidence as part of an explanation; unable to link explanation to the question; no comparison made between factors in the conclusion; essay lacking in content; unable to differentiate between explanation and description; descriptive essay that does not answer question.
Teacher assisted students during peer feedback activity Students have indicated that their teacher assisted them during peer feedback activity.
Students knew how to give feedback or marked Students have indicated that they are able to give feedback/comments to their peers; able to award marks/grade correctly.
Opportunity to evaluate own learning Students have indicated that peer feedback activity has given them opportunity to evaluate their own learning/strengths and weaknesses. For e.g. students were able to rationalise why they received certain level/marks because able to identify their mistakes/strengths; able to evaluate their competency level.

Participating in peer feedback has benefitted students in their learning
Students have indicated that they have benefitted from the peer feedback activity.
For e.g. students have gained in learning how to write a good essay; the peer feedback activity has been productive as they have sharpened their writing skills; students have received feedback on how to improve their essay; peer feedback activity has been useful, fruitful, meaningful; peer feedback activity has built students' confidence and motivation; students have gained good experience in marking and giving feedback.

Group members performed well in giving feedback
Students have indicated that their group members have done well during peer feedback activity.
For e.g. during peer feedback activity students were satisfied with group members in terms of their contributions during the discussion; enjoyed working with their peers; easy to work with their peers; their peers have been great partners and were cooperative, hardworking, enthusiastic and helpful in guiding them during the discussion.

Group has effective discussion
Students have indicated that the discussion during the peer feedback activity has been effective in helping them learn. For e.g. determining the LORMS of the essay.

Students could improve on their essay from feedback given by their peers
Students have indicated that they have given feedback/comments during peer feedback activity so that their peers could improve in essay writing.
For e.g. peers could avoid making the mistakes; peers would be able to score well.

Students believed they gave or received feedback to/from their peers
Students have indicated that they have given/received constructive feedback.

Students needed more time to assess and give feedback
Students have indicated the lack of time given to complete the peer feedback activity.
For e.g. students felt that the time given to complete the peer feedback task was too short; not enough time to complete the marking or they were rushed to complete the peer marking task.

Peer feedback a good method to learn from assessing variety of essays
Students have indicated that peer feedback activity was a good learning method because they could see variety of essays. For e.g. could learn/view the strengths/weaknesses of different essays and read/learn samples of essay with good conclusion.

Learnt how to be an examiner
Students have indicated that peer feedback activity has taught them how to be a marker.
For e.g. students learnt how accurately award marks; knew what teachers/examiners are looking out for in their essays; felt the frustrations of the marker and learnt how to avoid mistakes.

Peer feedback helped students to score in assignments
Students have indicated that the outcomes of the peer feedback activity could help them get better grades.

Peers helped to clarify doubts
Students have indicated that their peers have helped to clarify their doubts essay.
For e.g. students seek the help of their peers to clarify their doubts about the difference between explanation and description of factors; cleared confusion about rubrics/LORMS/SWA worksheet; help to understand what was written in the essay.

Peer feedback activity was enjoyable
Students have indicated that peer feedback activity has been positive.
For e.g. peer feedback activity has been enjoyable; interesting; fun; engaging; informative; remarkable; easy; good to have peer feedback because could learn how to write good essay.

Students marked accurately
Students have indicated that through peer feedback activity they could mark better.
For e.g. students could give/receive accurate feedback and marking.

Students marked with honesty Students have indicated that they have marked with honesty.
Wanted to do peer feedback again Students have indicated that they wanted to do peer feedback activity again. For e.g. students wanted more peer feedback activity so that they could learn their strengths/weaknesses/AFIs.
Teacher to mark assignments because it was more accurate Students have indicated that teacher should do the marking/feedback because of accuracy.

Appendix M   GCE O' Level Results, Scale Rating for Peer Feedback Participation and Performances Marks for Essays for Classes 3S, 3X, 3W and 3Y

Class 3S GCE O' Level Results, Scale Scores for Peer Feedback Participation and Performance Marks for Essays

S/N	GCE O' level Results	CT 1 Grades	CT2 Grades	Reflection Marks	PF 1 Contrib	PF1 Attitude	PF1 Focus	PF1 Problem Solving	PF1 Scale Score	PF2 Contrib	PF2 Attitude	PF2 Focus	PF 2 Problem Solving	PF2 Scale Score	Scale scores (P1+P2) O' level grade	PF 1 asgmt	PF2 asgmt	PF1+PF2 asgmts (100%)
23	A1	C5	A2	4	3	1	2	2	3	3	3	3	3	3	3/	0	0	0
31	A1	A1	A1	4	2	1	2	3	4	2	3	3	3	3	3.5	4	4	33
33	A1	B3	A2	5	2	2	2	2	3	3	3	3	3	3	3	6	0	25
41	A1	C5	D7	4	4	3	3	2	4	2	3	3	3	3	3.5	4	0	17
1	A2	A1	A1	2	3	3	3	3	3	3	3	3	3	3	3	7	11	75
5	A2	A1	D7	8	2	2	2	2	4	3	3	2	3	3	3.5	4	0	17
7	A2	C5	F9	6	2	2	2	2	4	2	3	3	3	3	3.5	4	4	33
10	A2	C5	C6	6	2	1	3	2	4	3	3	2	3	3	3.5	7	6	54
11	A2	B4	A2	5	2	1	3	2	4	2	3	3	3	3	3.5	4	0	17
14	A2	A1	C6	8	3	1	2	2	4	4	4	4	4	4	4	6	0	25
18	A2	C5	B3	6	2	2	2	2	4	2	3	3	3	3	3.5	0	4	17
28	A2	C5	C6	3	2	2	2	2	4	2	3	3	3	3	3.5	0	0	0
32	A2	B3	B3	5	3	3	3	3	3	4	3	2	3	3	3	4	3	29
35	A2	B4	D7	5	2	2	2	2	4	2	3	3	3	3	3.5	4	4	33
2	B3	C6	B3	4	2	2	2	2	4	3	3	2	3	3	3.5	11	5	67
3	B3	B4	C6	5	2	1	2	3	2	2	2	2	2	2	2	7	4	46
4	B3	B4	C6	6	1	1	3	3	3	4	3	2	3	3	3	3	4	29
6	B3	C5	D7	8	2	1	2	3	2	2	2	2	2	2	2	4	4	33
9	B3	C5	A2	4	2	2	2	2	3	3	3	3	3	3	3	7	4	46
13	B3	B3	D7	5	2	1	2	3	3	3	3	3	3	3	3	7	5	50
17	B3	B4	A1	7	4	3	2	3	3	4	3	2	3	3	3	12	6	75
21	B3	C5	C6	5	3	1	2	2	3	3	3	3	3	3	3	4	0	17
22	B3	C5	F9	5	2	2	2	2	3	3	3	3	3	3	3	4	5	38
24	B3	C6	C6	4	2	2	2	2	3	3	3	3	3	3	3	4	6	42

S/N	GCE O' level Results	CT 1 Grades	CT2 Grades	Reflection Marks	PF 1 Contrib	PF1 Attitude	PF1 Focus	PF1 Problem Solving	PF1 Scale Score	PF2 Contrib	PF2 Attitude	PF2 Focus	PF 2 Problem Solving	PF2 Scale Score	Scale scores (P1+P2) O' level grade	PF 1 asgmt	PF2 asgmt	PF1+PF2 asgmts (100%)
25	B3	C5	D7	4	3	1	2	2	4	3	2	3	3	3	3.5	7	5	50
26	B3	C6	D7	2	3	1	2	2	4	4	2	2	3	3	3.5	4	3	29
30	B3	D7	B3	1	3	3	1	1	2	2	2	2	2	2	2	6	5	46
40	B3	A1	B3	5	3	2	2	3	3	3	3	3	3	3	3	4	5	38
8	B4	A2	B3	6	2	2	2	2	3	1	2	2	2	2	2.5	4	5	38
15	B4	C5	A1	5	2	2	2	2	3	2	1	2	2	2	2.5	6	5	46
20	B4	A2	B3	6	1	0	1	2	2	0	0	2	1	1	1.5	6	5	46
38	B4	B4	F9	4	2	2	2	2	3	1	2	2	2	2	2.5	4	4	33
16	C5	D7	C6	2	1	0	1	1	2	2	2	2	2	2	2	6	0	25
19	C5	C6	D7	2	1	1	1	1	2	0	1	1	1	1	1.5	0	2	8
36	C5	C5	F9	4	2	2	2	2	3	1	2	2	2	2	2.5	0	0	0
12	C6	B4	D7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	17
27	C6	B3	A1	3	1	0	1	2	2	2	2	2	2	2	2	4	3	29
34	C6	F9	C6	2	2	0	1	1	2	2	2	2	2	2	2	0	0	0
37	C6	F9	C6	3	1	0	1	2	2	2	2	2	2	2	2	0	0	0
29	D7	C6	C6	6	1	1	1	1	2	0	1	1	1	1	1.5	4	0	17

(Contrib – Contribution, asgmt – Assignment, CT1 – Common Test 1, CT2 – Common Test 2, PF 1 – Peer Feedback 1, PF 2 – Peer Feedback 2)

Class 3X GCE O' Level Results, Scale Scores for Peer Feedback Participation and Performance Marks for Essays

S/N	GCE O' level Results	CT 1 Grades	CT2 Grades	Reflection Marks	PF 1 Contrib	PF1 Attitude	PF1 Focus	PF1 Problem Solving	PF1 Scale Score	PF2 Contrib	PF2 Attitude	PF2 Focus	PF 2 Problem Solving	PF2 Scale Score	Scale scores (P1+P2)/ O' level grade	PF 1 asgmt	PF2 asgmt	PF1+PF2 asgmts (100%)
4	A1	C6	D7	5	4	3	3	2	3	3	3	3	3	3	3	4	5	38
24	A1	C6	A1	6	3	4	3	2	3	4	4	4	4	4	3.5	8	8	67
43	A1	B3	B4	7	3	3	3	3	3	3	3	3	3	3	3	9	9	75
7	A2	E8	A2	6	3	3	3	3	3	4	3	3	2	3	3	8	5	54
18	A2	F9	B4	6	4	2	3	3	3	3	3	3	3	3	3	7	4	46
41	A2	F9	B3	8	3	3	2	4	3	3	3	3	3	3	3	0	4	17
2	A2	C5	A1	7	2	2	2	2	2	3	4	3	2	3	2.5	9	8	71
3	A2	E8	A2	7	3	1	2	2	2	3	3	3	3	3	2.5	7	8	63
15	A2	B3	C6	8	4	3	2	3	3	4	4	4	4	4	3.5	7	8	63
40	A2	C6	D7	5	2	1	2	2	2	3	3	3	3	3	2.5	8	8	67
5	B3	C5	A2	10	3	2	2	1	2	4	3	3	2	3	2.5	4	6	42
9	B3	E8	B3	7	3	2	2	1	2	2	2	2	2	2	2	9	9	75
10	B3	F9	C6	8	4	4	2	2	3	4	4	2	2	3	3	7	8	63
13	B3	D7	B4	7	3	3	3	3	3	3	4	3	2	3	3	9	9	75
14	B3	C6	A1	4	3	4	3	2	3	3	4	3	2	3	3	4	5	38
16	B3	F9	C6	5	3	3	3	3	3	3	3	3	3	3	3	9	4	54
21	B3	E8	A2	8	2	2	2	2	2	3	3	3	3	3	2.5	9	10	79
22	B3	F9	D7	7	3	1	2	2	2	4	3	2	3	3	2.5	4	5	38
26	B3	D7	D7	6	3	3	2	3	3	3	3	3	3	3	3	7	7	58
28	B3	D7	A2	9	4	4	2	2	3	3	3	3	3	3	3	7	4	46
30	B3	C5	B3	7	2	3	2	1	2	3	3	3	3	3	2.5	6	3	38
33	B3	C6	A2	6	3	4	3	2	3	3	3	3	3	3	3	4	5	38
34	B3	E8	B3	10	4	3	2	3	3	3	3	3	3	3	3	8	8	67
36	B3	E8	C6	5	2	2	2	2	2	3	3	3	3	3	2.5	0	5	21
37	B3	E8	A2	9	3	1	2	2	2	3	3	3	3	3	2.5	7	6	54
39	B3	E8	A2	5	3	2	3	0	2	3	3	3	3	3	2.5	8	4	50
6	C5	E8	B4	7	2	2	2	2	2	3	3	1	1	2	2	7	8	63

S/N	GCE O' level Results	CT 1 Grades	CT2 Grades	Reflection Marks	PF 1 Contrib	PF1 Attitude	PF1 Focus	PF1 Problem Solving	PF1 Scale Score	PF2 Contrib	PF2 Attitude	PF2 Focus	PF 2 Problem Solving	PF2 Scale Score	Scale scores (P1+P2)/ O' level grade	PF 1 asgmt	PF2 asgmt	PF1+PF2 asgmts (100%)
27	C5	C6	A2	10	2	2	2	2	2	2	2	2	2	2	2	8	8	67
8	C6	E8	A1	6	2	2	2	2	2	2	2	2	2	2	2	6	8	58
32	C6	B4	B3	7	2	2	2	2	2	2	2	2		2	2	8	8	67
35	C6	E8	C6	7	2	2	2	2	2	2	3	2	1	2	2	7	7	58
38	C6	C5	C6	6	2	0	1	1	1	2	2	2	2	2	1.5	9	9	75
19	C6	C5	C6	6	2	2	2	2	2	3	2	2	1	2	2	0	0	0
25	C6	E8	B3	9	2	2	2	2	2	2	1	2	3	2	2	0	0	0
29	C6	C5	C6	8	2	2	2	2	2	2	2	2	2	2	2	4	5	38
42	C6	A1	A1	6	1	2	1	0	1	1	1	1	1	1	1	4	5	38
12	D7	D7	B3	10	1	3	1	0	1	2	4	1	1	2	1.5	4	4	33
23	D7	E8	B3	8	2	0	1	1	1	2	2	2	2	2	1.5	4	5	38
17	D7	C5	C6	6	2	2	2	2	2	2	2	2	2	2	2	4	5	38
31	C6	C6	F9	8	3	3	1	1	2	3	3	3	3	3	2.5	6	7	54
11	C6	F9	B4	7	2	2	2	2	2	3	3	3	3	3	2.5	7	5	50

(Contrib – Contribution, asgmt – Assignment, CT1 – Common Test 1, CT2 – Common Test 2, PF 1 – Peer Feedback 1, PF 2 – Peer Feedback 2)

Class 3W GCE O' Level Results, Scale Scores for Peer Feedback Participation and Performance Marks for Essays

S/N	GCE O' level Results	CT 1 Grades	CT2 Grades	Reflection Marks	PF 1 Contrib	PF1 Attitude	PF1 Focus	PF1 Problem Solving	PF1 Scale Score	PF2 Contrib	PF2 Attitude	PF2 Focus	PF 2 Problem Solving	PF2 Scale Score	Scale scores (P1+P2)/ O' level grade	PF 1 asgmt	PF2 asgmt	PF1+PF2 asgmts (100%)
33	A1	C5	C6	7	4	3	2	3	3	4	4	4	4	4	3.5	4	6	42
12	A1	C5	B3	7	3	3	3	3	3	4	4	4	4	4	3.5	4	6	42
15	A1	C5	B4	9	3	3	3	3	3	3	3	3	3	3	3	7	6	54
27	A1	B3	A1	7	4	2	2	4	3	4	4	4	4	4	3.5	4	1	21
14	A1	B3	B3	8	3	4	3	2	3	3	3	3	3	3	3	11	5	67
16	A1	B4	A1	8	2	2	2	2	2	4	4	4	4	4	3	8	8	67
19	A1	B4	D7	8	4	3	2	3	3	3	4	3	2	3	3	8	6	58
29	A1	A2	A1	9	4	3	2	3	3	3	3	3	3	3	3	10	11	88
4	A1	A2	A1	7	3	3	3	3	3	4	3	2	2	3	3	12	10	92
37	A1	A2	A1	7	4	3	3	2	3	3	3	3	3	3	3	11	12	96
6	A2	F9	B4	7	4	2	3	3	3	4	3	3	2	3	3	4	6	42
8	A2	A1	A1	8	4	3	3	2	3	4	4	4	4	4	3.5	4	5	38
10	A2	D7	A1	8	3	3	3	3	3	3	3	3	3	3	3	4	6	42
11	A2	B3	A1	8	3	3	3	3	3	3	3	3	3	3	3	4	5	38
20	A2	A1	A1	7	3	2	2	1	2	4	3	3	2	3	2.5	6	7	54
25	A2	C5	A2	8	4	3	2	3	3	4	4	4	4	4	3.5	7	6	54
31	A2	C5	B3	6	2	2	2	2	2	4	2	3	3	3	2.5	3	2	21
1	A2	C5	C6	7	4	2	3	3	3	4	4	4	4	4	3.5	12	11	96
3	A2	C5	B4	7	4	4	4	4	4	4	4	4	4	4	4	10	12	92
9	A2	C5	A1	6	4	3	2	3	3	4	3	3	2	3	3	10	10	83
21	A2	B4	D7	6	2	2	2	2	2	3	4	3	2	3	2.5	8	9	71
13	A2	B3	C6	6	2	2	2	2	2	3	3	3	3	3	2.5	8	8	67
36	A2	B4	C6	7	4	3	3	2	3	4	4	4	4	4	3.5	7	7	58
2	B3	C5	B4	5	2	2	2	2	2	3	3	3	3	3	2.5	5	6	46
5	B3	A1	A1	7	2	1	3	2	2	3	3	3	3	3	2.5	11	4	63
17	B3	C5	C6	7	3	2	1	2	2	4	3	3	2	3	2.5	10	9	79

S/N	GCE O' level Results	CT 1 Grades	CT2 Grades	Reflection Marks	PF 1 Contrib	PF1 Attitude	PF1 Focus	PF1 Problem Solving	PF1 Scale Score	PF2 Contrib	PF2 Attitude	PF2 Focus	PF 2 Problem Solving	PF2 Scale Score	Scale scores (P1+P2)/ O' level grade	PF 1 asgmt	PF2 asgmt	PF1+PF2 asgmts (100%)
18	B3	B4	B4	7	2	2	2	2	2	2	2	2	2	2	2	4	5	38
22	B3	C5	A1	7	2	2	2	2	2	3	3	3	3	3	2.5	7	8	63
23	B3	B4	A1	8	2	1	2	3	2	3	3	3	3	3	2.5	4	5	38
28	B3	C5	A1	5	2	2	2	2	2	3	3	3	3	3	2.5	7	8	63
32	B3	C5	C6	5	2	2	2	2	2	2	1	2	3	2	2	7	5	50
35	B3	B3	B3	6	3	2	2	1	2	3	3	3	3	3	2.5	4	4	33
26	C5	C5	D7	5	2	2	2	2	2	2	2	2	2	2	2	11	10	88
30	C5	A2	B4	4	2	0	0	2	1	3	1	2	2	2	1.5	4	6	42
24	C6	B4	B4	7	1	1	1	1	1	3	1	2	2	2	1.5	7	7	58
34	C6	B4	B4	8	1	1	1	1	1	2	2	2	2	2	1.5	7	7	58
7	D7	E8	D7	6	1	2	1	0	1	2	2	2	2	2	1.5	7	5	50
38	D7	C5	B3	7	1	1	1	1	1	3	1	2	2	2	1.5	4	5	38

(Contrib – Contribution, asgmt – Assignment, CT1 – Common Test 1, CT2 – Common Test 2, PF 1 – Peer Feedback 1, PF 2 – Peer Feedback 2)

Class 3Y GCE O' Level Results, Scale Scores for Peer Feedback Participation and Performance Marks for Essays

S/N	GCE O' level Results	CT 1 Grades	CT2 Grades	Reflection Marks	PF 1 Contrib	PF1 Attitude	PF1 Focus	PF1 Problem Solving	PF1 Scale Score	PF2 Contrib	PF2 Attitude	PF2 Focus	PF 2 Problem Solving	PF2 Scale Score	Scale scores (P1+P2)/ O' level grade	PF 1 asgmt	PF2 asgmt	PF1+PF2 asgmts (100%)
2	A1	A1	A1	5	3	3	3	3	3	3	4	4	4	4	3.5	7	6	54
5	A1	A1	A2	8	3	3	3	3	3	3	3	3	3	3	3	6	6	50
7	A1	C5	C6	8	2	3	4	3	3	3	4	4	4	4	3.5	6	6	50
17	A1	B4	D7	5	3	3	3	3	3	3	4	4	4	4	3.5	4	9	54
20	A1	B4	B3	7	3	3	3	3	3	3	3	3	3	3	3	9	4	54
22	A1	B3	A1	7	3	3	3	3	3	3	4	4	4	4	3.5	6	7	54
34	A1	B4	A1	8	4	2	3	3	3	3	4	4	4	4	3.5	7	5	50
36	A1	B4	B4	8	3	3	3	3	3	3	4	4	4	4	3.5	4	8	50
37	A1	A2	A1	8	3	3	3	3	3	3	4	4	4	4	3.5	4	0	17
40	A1	A2	B4	8	4	4	4	4	4	4	4	4	4	4	4	7	5	50
26	A1	C5	B3	5	3	3	3	3	3	3	4	4	4	4	3.5	5	7	50
3	A1	C6	B3	6	4	4	4	4	4	4	4	4	4	4	4	9	9	75
8	A1	C5	A2	4	4	4	4	4	4	4	4	4	4	4	4	8	9	71
9	A1	B3	A1	5	4	4	4	4	4	4	4	4	4	4	4	11	10	88
10	A1	A1	B3	9	4	3	2	3	3	3	4	4	4	4	3.5	10	9	79
11	A1	B4	A1	8	4	3	2	3	3	3	4	4	4	4	3.5	8	8	67
15	A1	B3	B4	5	4	4	4	4	4	4	4	4	4	4	4	8	9	71
23	A1	D7	A1	6	3	3	3	3	3	3	4	4	4	4	3.5	9	6	63
24	A1	C5	B3	7	3	3	3	3	3	3	3	3	3	3	3	7	9	67
33	A1	B4	C6	3	4	4	4	4	4	4	4	4	4	4	4	11	9	83
1	A2	C5	C6	6	3	3	3	3	3	3	4	4	4	4	3.5	3	3	25
14	A2	A2	B4	4	3	2	3	4	3	3	4	4	4	4	3.5	4	4	33
16	A2	C6	D7	5	3	3	3	3	3	3	3	3	3	3	3	4	5	38
18	A2	C5	B3	7	3	3	3	3	3	3	4	4	4	4	3.5	8	3	46
27	A2	C5	A2	7	3	3	3	3	3	3	4	2	3	3	3	4	4	33
28	A2	C6	C6	7	3	3	3	3	3	3	2	4	3	3	3	4	9	54
29	A2	D7	F9	7	3	3	3	3	3	3	4	4	4	4	3.5	5	6	46

S/N	GCE O' level Results	CT 1 Grades	CT2 Grades	Reflection Marks	PF 1 Contrib	PF1 Attitude	PF1 Focus	PF1 Problem Solving	PF1 Scale Score	PF2 Contrib	PF2 Attitude	PF2 Focus	PF 2 Problem Solving	PF2 Scale Score	Scale scores (P1+P2)/ O' level grade	PF 1 asgmt	PF2 asgmt	PF1+PF2 asgmts (100%)
30	A2	C5	B3	5	3	3	3	3	3	3	3	3	3	3	3	4	6	42
31	A2	B4	B4	5	4	4	4	4	4	4	4	4	4	4	4	8	4	50
41	A2	F9	A2	5	3	3	3	3	3	3	3	3	3	3	3	4	6	42
32	A2	A2	B4	5	3	3	3	3	3	3	3	3	3	3	3	5	7	50
21	A2	C5	C6	7	3	3	3	3	3	3	4	4	4	4	3.5	7	9	67
39	A2	C6	A1	9	3	3	3	3	3	3	4	4	4	4	3.5	8	9	71
4	B3	B3	A1	4	3	3	3	3	3	3	3	3	3	3	3	7	7	58
6	B3	C6	D7	3	3	3	3	3	3	3	3	3	3	3	3	6	7	54
12	B3	A1	B3	7	3	3	3	3	3	3	3	3	3	3	3	7	10	71
13	B3	B3	D7	7	3	3	3	3	3	3	3	3	3	3	3	7	6	54
19	B3	A2	B4	6	3	3	3	3	3	3	4	4	4	4	3.5	8	9	71
25	B3	B4	A2	8	2	2	2	2	2	2	3	3	3	3	2.5	8	9	71
35	B3	E8	B4	4	2	2	2	2	2	2	3	3	3	3	2.5	6	3	38
38	B3	A2	B3	5	3	3	3	3	3	3	3	3	3	3	3	8	10	75
42	C5	E8	C6	3	1	0	1	2	1	1	2	2	2	2	1.5	4	4	33

(Contrib – Contribution, asgmt – Assignment, CT1 – Common Test 1, CT2 – Common Test 2, PF 1 – Peer Feedback 1, PF 2 – Peer Feedback 2)

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