

The Influence of Professional Learning
Communities Employing Quality Teaching
Framework on English as a Foreign
Language Teachers' Pedagogical Content
Knowledge for Promotion of Higher Order
Thinking in Rural Indonesia

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DEFINITION OF KEY TERMINOLOGY

Key terms	Abbreviations	Definitions
Background knowledge	BK	The way teachers employ students' background knowledge in their lessons to help them see the relevance of the content (NSWDET, 2003).
Connectedness	CN	The relevance of students' learning to their daily lives and to how they could share their knowledge beyond the classroom (NSWDET, 2003).
Content Knowledge	CK	This knowledge also covers knowledge of English proficiency (Moradkhani, Akbari, Samar, & Kiany, 2013), including various knowledge of different text genres in the EFL field (Irvine-Niakaris & Kiely, 2015) which teachers in Indonesia must use to teach genre-based lessons for speaking, listening, reading and writing. They need knowledge related to various text genres, such as recount, narrative, report, descriptive, and exposition to enable effective teaching of EFL content in their classrooms (Faisal, 2015).
Cultural knowledge	CulK	Teachers considering students' context and culture when designing and teaching lessons (NSWDET, 2003).
Curriculum knowledge	CurrK	Knowledge on understanding the prescribed EFL 2013 Curriculum objectives, selecting their teaching materials, and understanding the competencies standard that students must achieve in their learning (Faisal, 2015).
Deep knowledge	DK	Teachers' presentation of information related to the central ideas of a content area, with reasoning and arguments related to the central topics or key concepts of the lesson being presented in a complex and deep way (NSWDET, 2003).
Deep understanding	DU	Students developing their understanding of the content presented in lessons by being able to explore and critically evaluate the relationship of concepts so that they are able to use the knowledge to draw conclusions and solve problems (NSWDET, 2003).
Engagement	EG	Students' active participation during EFL lessons (NSWDET, 2003).

Explicit quality criteria	EQC	Teachers' knowledge of assessment and how they use it to design quality criteria for learning tasks given to students in their classrooms (NSWDET, 2003).
General pedagogical knowledge	GenPK	Knowledge that helps teachers to teach lessons successfully in the classroom (Gess-Newsome et al., 2019), including knowledge of instructional strategies, classroom management, classroom communication and student assessment.
High expectations	HE	Teachers' ability to clearly communicate their expectations about the quality of students' learning (NSWDET, 2003).
Higher order thinking	HOT	Teachers' and students' understanding of HOT (analysing, evaluating, and creating), their ability to identify how they used HOT in their EFL lessons as a way of teaching critical thinking, creative thinking and problem-solving activities (Krathwohl, 2002; NSWDET, 2003)
Inclusivity	IN	Teachers' efforts to prepare learning activities that are appropriate for students' abilities and that encourage active participation from all students during lessons despite their cultural or social backgrounds (NSWDET, 2003).
Knowledge of learners and their characteristics	KLLC	Understand their learners and their different abilities so teachers can facilitate learning for all students effectively (Peraturan Pemerintah, 2008).
Knowledge of educational context and culture	KECC	Understand the underlying cultures of their workplace and the community where their teaching is situated to adjust teaching to the context and culture of the community in which they are working (Peraturan Pemerintah, 2008; Shulman, 2015).
Knowledge integration	KI	"Meaningful connections are made between different topics and/or between different subjects" (NSWDET, 2003, p.44).
Metalanguage	ML	Teachers' knowledge related to specific grammar or specialised language aspects in the topics they teach (NSWDET, 2003).
Narrative	N	Teachers using stories related to the content of the lesson to help students better understand the concepts of the lesson (NSWDET, 2003).
Pedagogical content knowledge	PCK	Teachers' professional knowledge or professional wisdom that enables them to integrate various aspects of their knowledge base to plan and teach lessons effectively to students (Berry, Loughran, & van Driel, 2008; Driel & Berry, 2012; Magnusson, Borko, & Krajcik, 1999; Mulholland & Wallace,

2005; Shulman, 1986, 2015; Van Driel & Berry, 2010).

Problematic knowledge	PK	Teachers' knowledge of how to encourage students to question the knowledge covered in lessons and to be able to share their understanding of lesson content and their perspectives with others in the classroom (NSWDET, 2003).
Professional learning community	PLC	"The potential that a range of people based inside and outside a school can mutually enhance each other's and pupils' learning as well as school development." (Stoll et al., 2006, p.223)
Quality Teaching Framework	QTF	A pedagogy model with three dimensions that represent classroom practices that have been linked to improved student outcomes. The three dimensions are pedagogy "that promotes intellectual quality, establishes a high-quality learning environment and generates significance by connecting students with the intellectual demands of their work." (NSWDET, 2003, p. 10).
Social support	SS	The way teachers and students create a safe classroom environment in which all students can thrive as they learn (NSWDET, 2003).
Student' self-regulation	SSR	Students' ability to regulate their behaviours themselves during their learning in lessons (NSWDET, 2003).
Student direction	SD	Opportunities given to students to make choices and to be able to negotiate their learning activities, the duration of activities, the phase of activities (stages or steps in the activities) and how they would like to complete them (NSWDET, 2003).
Substantive communication	SC	The way teachers manage and encourage students to share their views and ideas during lessons (NSWDET, 2003).
Video based reflection	VBR	The use of video recordings to allow teachers to observe their own practice or that of their colleagues and to encourage productive discussions among teachers during professional learning (Arya, Christ, & Chiu, 2016; Christ, Arya, & Chiu, 2017; Gaudin & Chaliès, 2015).

ABSTRACT

Indonesian students are not performing well academically in comparison to their peers from other countries, as reported by the Programme for International Student Assessment (PISA). This is also the case in the context of teaching English as a foreign language (EFL). One of the key contributors to student learning outcomes is quality of teaching. There is a gap between teachers' pedagogical content knowledge (PCK) related to teaching higher order thinking (HOT) in classrooms in rural areas in Indonesia. This thesis reports an investigation that aimed to identify EFL teachers' PCK knowledge and develop their teaching quality through improving their PCK in relation to teaching HOT in EFL. It details how a Professional Learning Community (PLC) intervention was carried out in two schools in rural Indonesia and discusses changes in teachers' PCK during and after the intervention was completed.

Three studies are reported in the thesis. Study 1 focuses on understanding the status of EFL teachers' PCK, their beliefs about and needs related to teaching HOT. The findings of this study informed Study 2 which documents how a PLC to develop PCK related to promoting HOT was designed, implemented with five EFL teachers, and evaluated. The investigation employed the Quality Teaching Framework (QTF) (New South Wales Department of Education and Training [NSWDET], 2003) and Video-Based Reflection (VBR). The QTF was used because it draws connections between teachers' PCK and other knowledge categories and can be used to promote HOT in teaching and learning. Study 3 focuses on evaluating the long-term impact and sustainability of the PLC on the teachers' PCK. Desimone's framework (2009) is employed to study the impact of the PLC.

A mixed method approach was employed in this investigation. Data were collected via a survey questionnaire, individual interviews, classroom observations, and documents. Fifty-two teachers completed the initial

survey and five of these teachers volunteered to participate in a long-term professional learning intervention. Thematic data analysis was employed to analyse qualitative data in NVivo version 12 (QSR, 2018) in all three studies. Quantitative data were analysed using SPSS version 25 (IBM, 2018).

The findings of Study 1 revealed that EFL teachers had few opportunities to collaborate, de-privatise their practice and reflect on their teaching. They had limited PCK for teaching HOT and held the belief that their students were not capable of learning HOT in their EFL classrooms. They employed a teacher-centred approach to teaching, based classroom work on textbooks and oriented their teaching to cover lower order thinking (LOT).

The findings of Study 2 highlighted the effects of a PLC intervention that employed the QTF on teachers' PCK for promoting HOT in their EFL lessons. It showed that the five participating teachers had improved their PCK, teaching quality, and that their beliefs and attitudes related to teaching HOT were more positive. However, while recognising the importance of HOT in EFL lessons, they expressed the view that they required more time to develop a deeper understanding of HOT in order to teach it successfully. The PLC contributed to changes in teachers' PCK beliefs and attitudes related to teaching HOT, and to their beliefs about rural students' ability to learn HOT.

The findings of Study 3 showed that, except for a change in the teachers' views about developing a quality learning environment, there was no significant difference in the five teachers' PCK from the time of the pre-intervention assessment to the time of the post-intervention assessment survey conducted a year later. Interviews with the four teacher participants in the PLC indicated that they were starting to feel confident about designing lesson plans and recognised that it is important to integrate HOT into EFL lessons. However, they struggled to enact HOT in

their teaching and were not able to sustain insights developed in the PLC because external and internal contextual factors hindered them from doing this. These findings support other research advising that changes in teachers' attitudes, beliefs and practice take time and that in order to sustain gains from professional learning interventions, such as this PLC conducted with rural teachers in Indonesia, it is important to consider contextual factors. These include having school leadership support, regular time for in-depth professional discussions and critical reflection, a well-designed and implemented program with a facilitator, a targeted program and a follow-up program that identifies and caters for teachers' professional learning needs.

This investigation provides a significant contribution to current and future research on EFL teachers' PCK development and the viability and sustainability of PLC interventions in rural areas of Indonesia. It highlights the need for teachers to understand HOT in order to be able to promote HOT in EFL lessons. This research is also relevant to the Indonesian Government efforts for improving teachers' knowledge and teaching quality and contributes to new understandings of the value of implementing professional learning interventions that use the QTF in the Indonesian rural context where access to professional learning is limited. In addition, it shows the value of using VBR to stimulate EFL teachers' critical reflection on their teaching practice. Overall, the findings of this research could support educational reform efforts in Indonesia in general, and assist efforts to improve the quality of EFL teaching and learning in rural eastern Indonesia in particular. A final contribution of the research is the description of a pedagogical structure that could be used in a PLC to help EFL teachers understand and teach HOT.

Keywords: Professional Learning Community, EFL Teachers' Professional Learning, Higher Order thinking, Pedagogical Content Knowledge, Quality Teaching Framework, Video-Based Reflection.

DECLARATION

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

Signed:

A handwritten signature in black ink, appearing to read 'Y. Anita', is written over a set of horizontal lines.

Date: 10 September 2021

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My thanks for permissions to access research sites in Indonesia from the Republic of Indonesia Research and Development Department

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children in our community to pursue their dreams because nothing is impossible with God.

CHAPTER 1 INTRODUCTION

1.1 Introduction

The focus of this thesis is to report on an investigation of rural Indonesian English as a Foreign Language (EFL) teachers' pedagogical content knowledge (PCK) (Shulman, 1986, 2015) in relation to promoting students' higher order thinking (HOT) through a professional learning community (PLC) intervention that employed the Quality Teaching Framework (QTF) and Video-Based Reflection (VBR).

This chapter introduces the background and context of the study, as well as the researcher's background. It also introduces the rationale for the study and its broad research aims and introduces and defines key terminology. The structure of the thesis is outlined.

1.2 Background of the study

The aim of education is to teach students so that they can achieve their best learning outcomes. However, international studies show that Indonesian students are not achieving well and have lower learning outcomes than in other countries. The Programme for International Student Assessment (PISA) between 2015 and 2018 reported a substantial achievement gap between Indonesian students and students from other countries (OECD, 2016a, 2016b, 2016c). According to the PISA findings, students from countries such as Finland, Norway, Germany, Estonia, UK, Canada, USA, Australia, China, Japan, Korea, and Singapore achieve better learning outcomes than students from Indonesia and some other developing countries (OECD, 2016a, 2016b, 2016c). From 2006 until 2018 the PISA results for Indonesian students in Mathematics, Science and Reading were below the average world standard according to the Organization for Economic Cooperation and

Development (OECD) (OECD, 2019a, 2019b, 2019c). These findings suggest an urgent need for Indonesia to address the achievement gap to prepare Indonesian students to compete globally by raising the standard of education quality (Jalal et al., 2009). This need is especially evident in rural areas such as East Nusa Tenggara (ENT) province, in which this research took place. The results of the Indonesian National Examination in 2018/2019 showed the achievement of students in ENT to be below the national average score (Puspendik-Kemendikbud, 2018, 2019). Student achievement in this rural area of Indonesia remains low (Puspendik-Kemendikbud, 2018, 2019) despite Teacher Certification Programs run by the Indonesian Government (Kusumawardhani, 2017). This is the case in all subject areas, including EFL, which is of interest to this research.

One way to close the achievement gap between Indonesian students and students from other countries is to improve teaching quality. There is consensus in education that quality teaching contributes to quality learning. For example, Desimone and Long (2010) found that students who experience low quality teaching have lower achievement. Cochran-Smith (2003) reported a link between the quality of classroom instruction and students' achievement, stating that "teaching quality makes significant difference in learning and school effectiveness" (Cochran-Smith, 2003, p. 95).

The quality of teaching is influenced by the quality of professional learning in which teachers participate. A number of studies have suggested a causal relationship between teachers' professional learning and improvements in their teaching and, consequently, improvements in student achievement (e.g., Akiba & Liang, 2016; Burns et al., 2018; Desimone, Smith, & Phillips, 2013). Efforts to improve teaching quality are viewed in many countries as essential to improve students' learning outcomes. Programs for school reform have resulted in governments worldwide spending billions of dollars on teacher professional learning initiatives in their countries (King, 2016). For example, in Australia

several programs have been developed to improve the quality of teaching, such as the South Australian Teaching for Effective Learning (SA TfEL) (SADECS, 2010), the Productive Pedagogy Model (Queensland Government Education, 2016), the Quality Teaching Model (NSWDET, 2003), The Quality Teaching Rounds (Gore, Bowe, & Elsworth, 2010; Gore & Rickards, 2020) and the Teachers' Portfolio Assessment Program (Ingvarson, 2016). The importance of teachers' professional learning is also a priority for the Indonesian Government and is highlighted in the Teachers' Certification Program in Indonesia (e.g., Chang et al., 2014; Jalal et al., 2009). However, there is still a gap in the quality of teachers' practice resulting in lower student learning outcomes (Darling-Hammond, 2014), and this has been evident in the Indonesian context in general (Chang et al., 2014, Jalal et al., 2009) and also specifically in relation to the EFL teaching context (Kirkpatrick & Liddicoat, 2017).

The approach to teaching in Indonesian classrooms reflects what has been the traditional approach to teaching and learning, relying predominantly on transmissive teaching pedagogy, rote learning, and teacher-directed tasks (e.g., Chang et al., 2014; The World Bank, 2017). Such a teacher-centred approach does not facilitate or provide adequate opportunities for students to develop critical and creative thinking, and problem-solving skills, which are essential in HOT. This is the case in many teaching areas, including EFL education.

Engaging students in language learning activities that promote the use of HOT skills has been found to have a beneficial effect on their EFL learning outcomes (e.g., Indriyana & Kuswandono, 2019; Purnama & Nurdianingsih, 2019; Setyarini, et al., 2018; Sinambela & Saragih, 2018). For example, HOT instructions in EFL learning encourage students' interest in EFL and contribute to improving their language proficiency, such as improving speaking skills (Setyarini, et al., 2018), writing skills (Sopiani, Said, & Ratnawati, 2019) and reading skills (Indriyana & Kuswandono, 2019; Sinambela & Saragih, 2018). In addition, effective

command of a language is important to help students function successfully in a global community. Thus, it is important to develop EFL teachers' ability to plan and implement lessons that encourage their students to think critically and creatively through employing HOT.

One way to help teachers improve their knowledge base for teaching, and the quality of their teaching, is through professional learning where they develop their understanding of HOT concepts and practices and use their new knowledge in their classroom contexts. While in-service training can potentially benefit teachers in developing their teaching of HOT (Torff, 2003), it has been found that some types of professional learning are more effective than others (Chen, Lee, Lin, & Zhang, 2016; Guskey, 2009; Hunzicker, 2011; Nawab, 2018; Porter, Garet, Desimone, & Birman, 2003). Effective teacher development programs have a content focus, involve active learning, are consistent with educational reforms and policies, have a longer duration than typical one-off seminars, are job-embedded and involve the collaboration of teachers (Desimone, 2011; Guskey, 2009; Hunzicker, 2011). These active approaches are more likely to enable teachers to improve their knowledge and skills, change their attitudes and beliefs, and lead them to change their teaching practices, resulting in improved student learning outcomes (Desimone, 2009; Garet, Porter, Desimone, Birman, & Yoon, 2001).

The PLC approach to professional learning, as originally defined by Hord (1997), has been found to be effective. This PLC approach allows teachers' PCK to develop and enables the move from a teacher-centred approach to a student-centred one, with a focus on developing students' analytical, critical and creative thinking. Research on teachers' PLC focusing on PCK enhancement is underexplored in the context of EFL professional learning in eastern Indonesia.

PCK is one of the knowledge base categories introduced by Shulman (1986) and is an important component for teaching effectively. Teachers'

PCK contributes to high quality teaching that helps students to achieve learning objectives. Studies of EFL teachers' PCK in the Indonesian context have been limited to western Indonesia, with little being known in relation to EFL teachers' PCK in eastern Indonesia. The current study attempts to fill the gap in the research literature on PCK in eastern Indonesia to understand the status of EFL teachers' PCK and their professional learning needs. One way to decrease the student achievement gap and improve education quality in Indonesia, and eastern Indonesia in particular, is to improve teaching quality through strengthening teachers' PCK. Strengthening EFL teachers' PCK for HOT teaching provides the background that underpins this study in which EFL teachers were invited to work collaboratively in a PLC, with a focus on PCK related to promoting HOT in their EFL teaching. The wider context of this study is explained in the next section.

1.3 The context of the study

This section describes the context of the study.

1.3.1 The geographic location of East Nusa Tenggara Province in Indonesia

The geography of Indonesia poses a challenge for providing equal development and education quality opportunities across the country. The archipelago of Indonesia consists of five main islands (Borneo, Sumatra, Java, Sulawesi, and Papua) and more than 17,000 small islands. Luschei and Zubaidah (2012) commented on this through the lens of education and asserted that "perhaps the greatest educational challenge facing Indonesia is the country's vast geography and many remote areas" (p. 337). They noted that some areas in Indonesia have limited access to high quality services and education providers, which is especially the case for rural and remote areas (Luschei & Zubaidah, 2012). Programs for the growth advancement of Indonesia have been mainly focused on the western part of the country, leaving the eastern part of Indonesia

underdeveloped. In particular, the rural and remote areas in the eastern part of the country have limited access to good quality education, health, and economic services and can be classified as disadvantaged areas. ENT Province, where the present research was conducted, is one of the thousands of small Indonesian islands located in eastern Indonesia. Figure 1.1 presents the map of Indonesia and points out the location of ENT in the Indonesian archipelago. Figure 1.2 shows a detailed map of ENT province.

Figure 1.1 Map of Indonesia (Badan Pusat Statistik, 2018) showing the location of East Nusa Tenggara Province

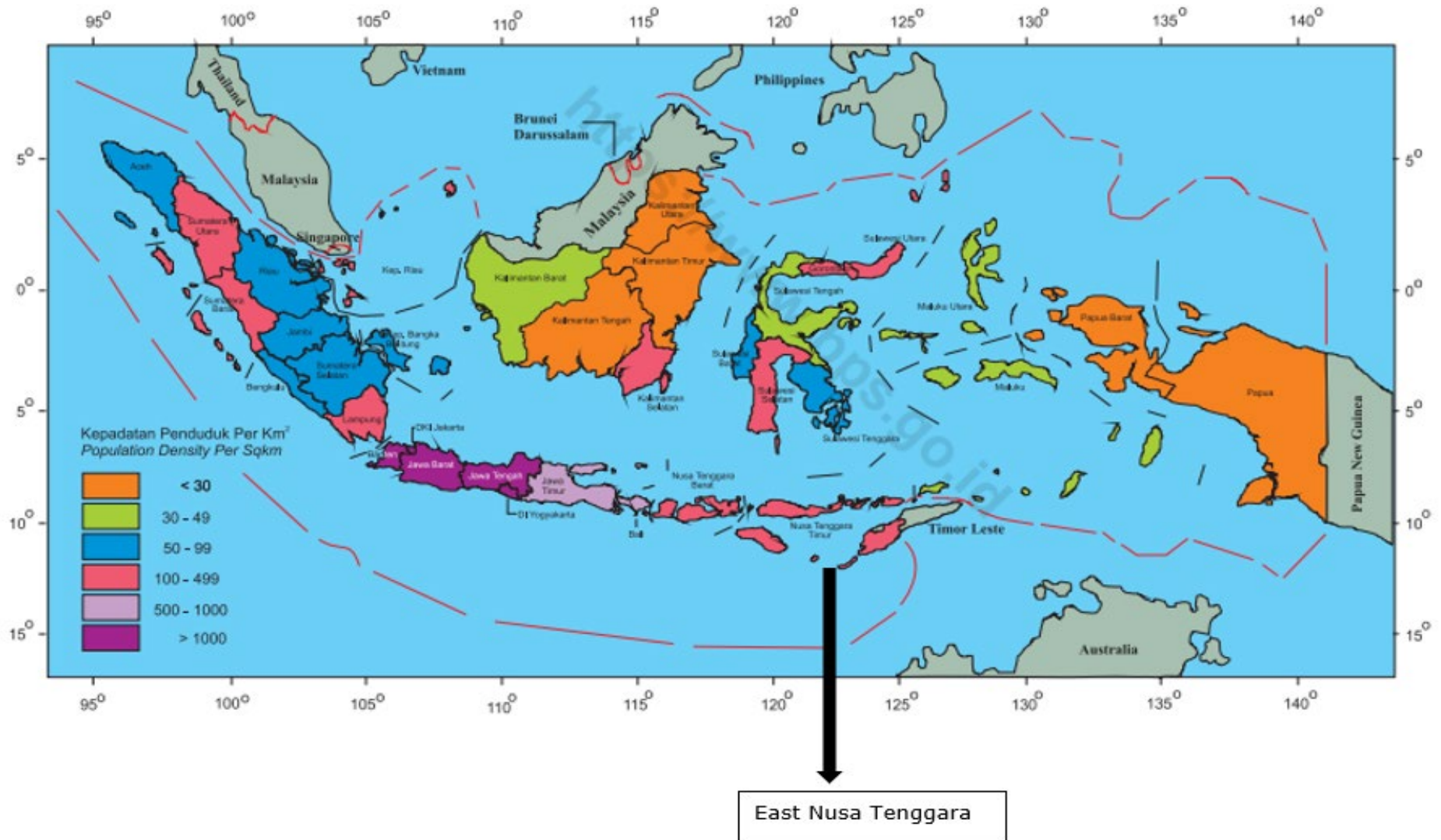
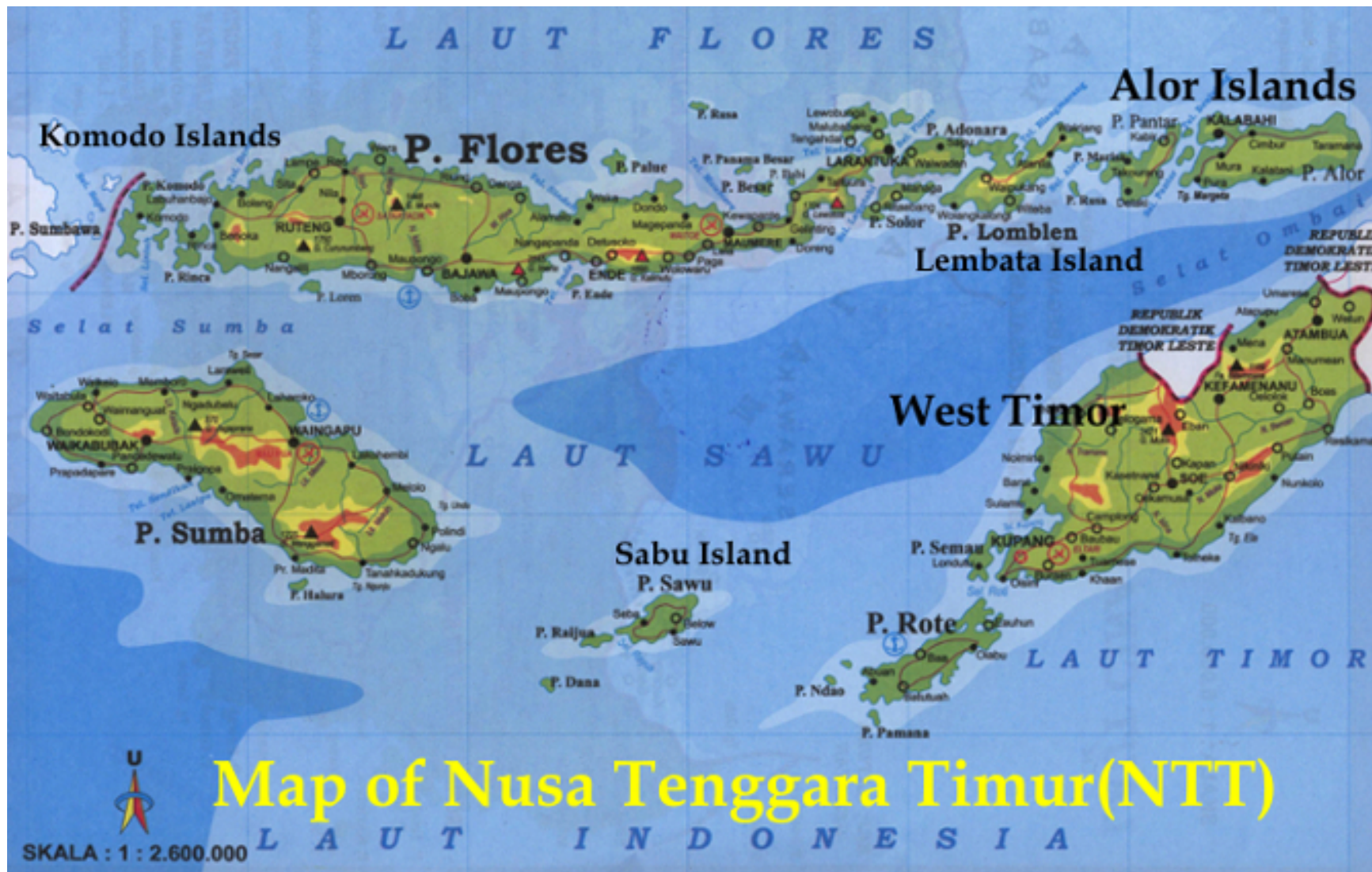


Figure 1.2 Map of East Nusa Tenggara Province (Comdeks, 2011)



According to the Indonesian Government's classification of underdeveloped regions, most regencies in ENT Province are underdeveloped and disadvantaged (Perpres, 2015). For example, many schools in the east do not have adequate school facilities nor resources to support good quality teaching and learning. The disadvantage is also reflected in the gap in the quality of education in rural and remote areas of this province as reflected in high teachers' absenteeism in these areas (The World Bank, 2019). This area is underrepresented in the professional learning literature in Indonesia, especially in relation to reducing education disparity in this province (Febriana, Karlina, Nurkamto, & Rochsantiningasih, 2018; Febriana, Nurkamto, Rochsantiningasih, & Muhtia, 2018; The World Bank, 2019). The next section explains EFL teaching and learning in Indonesia.

1.3.2 EFL teaching and learning in Indonesia

This section presents information related to English as a Foreign Language (EFL) teaching and learning in Indonesia and describes its status in the Indonesian education system.

The Indonesian Government considers it is important that the English language is included as a compulsory subject in Indonesian schools (Kemendikbud, 2016a, 2016b). Although there are other foreign languages taught in Indonesian schools, such as Arabic, Mandarin and German, EFL is a compulsory subject taught in junior high school (grades 7-9), senior high school (grades 10-12) and university (undergraduate and postgraduate programs). Some primary schools and kindergartens in Indonesia also teach EFL (Kirkpatrick, 2011). This positions EFL as an important foreign language that students need to learn to compete in a global environment (Kemendikbud, 2016a, 2016b). However, it is difficult for students to achieve high proficiency in English because they have limited time to learn and use the English language at school (Lie, 2007). This is especially true for students who live in rural and remote areas where they have limited exposure to English. In these areas, teachers are

the only source of English language learning and there is limited access to educational resources, with the result that it is pivotal for EFL teachers to be able to provide high quality EFL teaching.

The Indonesian Regulation, The Teacher Academic Qualifications and Competencies Standard Number 16 Year 2007, states that teachers of junior and senior high school levels “must have the minimum academic qualification of a four-year diploma (D4) or bachelor’s degree (S1) in a relevant field of study to the subject they teach” (Kemendiknas, 2007a, p. 1). Moreover, to teach effectively, Indonesian teachers must possess high standards of pedagogy, personal character, and social and professional skills (Kemendiknas, 2007a; Presiden Republik Indonesia, 2005).

The new EFL Curriculum 2013 (revised version) emphasises that Indonesian graduates should develop HOT skills such as analysing, evaluating and creating (Krathwohl, 2002). This Curriculum has the stated aim of preparing students to be creative, productive, critical, independent, collaborative, and communicative (Kemendikbud, 2016a). HOT is also positioned as a significant element of the Indonesian Government Standard for Basic and Advanced Educational Content Policy Number 21 Year 2016 of the Graduate Standards Competency (Kemendikbud, 2016a), in which proficiency in the English language is recognised as being significant in encouraging scientific learning.

HOT in EFL learning facilitates students’ development of EFL proficiency as well as encouraging students to have higher motivation and interest to study EFL (Indriyana & Kuswandono, 2019; Purnama & Nurdianingsih, 2019). The way HOT activities help students to develop their EFL proficiency is through engaging students in higher levels of analytical, evaluative and creative thinking (Indriyana & Kuswandono, 2019; Mehta & Al-Mahrooqi, 2015; Purnama & Nurdianingsih, 2019; Sada, 2019; Setyarini et al., 2018, Sopiani, Said, & Ratnawati, 2019). It allows them to not only listen, repeat or copy and apply their knowledge of the

language in their learning, but to have opportunities to analyse, evaluate and create in their language learning. These activities encourage students to develop their EFL proficiency in meaningful ways (Indriyana & Kuswandono, 2019; Setyarini et al., 2018).

In grades 9 and 12, Indonesian students are obliged to sit for National Examinations in which EFL is a high stakes subject (Kemendikbud, 2015a; Lie, 2007; Widodo, 2016). The results of this examination determine students' futures in terms of whether they can continue their study to the next level of education, and students know that passing the examination is an important part of shaping their pathway to a better future. Many Indonesian EFL teachers focus their teaching narrowly on preparing students to pass these national examinations (Ginting & Kuswandono, 2020; Tyas, Nurkamto, Marmanto, & Laksani, 2019; Utami, Nurkamto, & Marmanto, 2019), and do not focus on developing students' English proficiency through spending time on HOT.

The position of the English language as a global language means that it is necessary to prepare Indonesian students to have good English language proficiency so they can compete in global workplaces and be prepared to be 21st century global citizens. In fact, EFL is the lingua franca of South East Asian countries and of the rest of the world (Kirkpatrick, 2011), highlighting the urgency of preparing Indonesian students to be able to communicate, access information and use the English language critically and creatively. Thus, EFL teachers' responsibility in EFL classrooms extends beyond preparing for the national examination to developing students' life skills needed in the 21st century. This is one of the main areas of focus of this study: to encourage the promotion of HOT in EFL teaching and in the learning of rural students to support further development of their critical and creative thinking skills. This research project has focused on professional learning of Grade 7-12 EFL teachers. The level of education this research project relates to is Junior and senior high school EFL teachers (grade 7-12), with surveys for grade 7-12 EFL

teachers and professional learning community for grade 7-9 or Junior high school EFL teachers.

1.3.3 Educational challenges for teachers in Indonesian rural schools

This section presents challenges that teachers in rural schools in eastern Indonesia face as they carry out their duties as professional teachers.

Rural schools are different from urban schools due to their geographic remoteness, small population size, low social economic status, the homogenous nature of the society and the ethnic background of the people (Alfonso & Thomas, 2019). Rural schools in general, and particularly in Indonesia, have less infrastructure, resources, computers, and internet connection than urban schools (Alfonso & Thomas, 2019; Biddle & Azano, 2016). Moreover, urban schools have more and better-quality teachers than in rural schools (Chang, et al., 2014). Policies and approaches to teaching and learning in rural schools must consider the unique context of these schools and the challenges due to these characteristics. However, it has been found that there is a tendency for education policy in rural schools to allow little consideration of the specific context of rural spaces and to simply apply general education approaches (Corbett, 2016). This contributes to the lack of progress in improving the quality of rural education and the lack of preparation for teachers who are teaching in rural schools, which in turn leads to low quality teaching (Alfonso & Thomas, 2019). For this reason, professional learning for rural teachers should consider the rural context to ensure the learning matches the needs of teachers in these areas.

The results from international assessments of student learning, such as PISA, indicate that students from rural schools generally do not perform well compared to their city counterparts (Lounkaew, 2013; Sullivan, McConney, & Perry, 2018). Poor learning outcomes can be attributed to financial disadvantage, which is a factor that influences students' learning

(Alfonso & Thomas, 2019; Chang et al., 2014; Jimerson, 2005). It has been found that students from low socio-economic backgrounds in rural areas have limited time for learning and spend less time at school because they need to help their parents/families by working (Alfonso & Thomas, 2019).

In the rural context, the provision for teachers' professional learning is limited, and access to it provides a further challenge for rural teachers because of high costs associated with such professional learning (Alfonso & Thomas, 2019), which may involve a high cost for transport to and accommodation at the location where the professional learning is provided. If professional learning is based in rural communities it can be tailored to rural teachers' needs and encourage their collaboration, which could also reduce feelings of professional isolation (Alfonso & Thomas, 2019; Biddle & Azano, 2016). A professional learning model is required to facilitate this type of collaboration and help minimise the costs associated with paying experts from outside the school to present programs or with teachers travelling to attend professional learning elsewhere. This need has driven the present research which employs a model of professional learning that has been adopted and adjusted to facilitate the professional development of rural EFL teachers in eastern Indonesia.

The significant difference between urban and rural school contexts is highlighted by the Ministry of National Education (MoNE) and World Bank's BERMUTU program report, suggesting that there is an oversupply of teachers in city areas and an undersupply of teachers in remote areas (Jalal et al., 2009). Indeed, Indonesia has a shortage of teachers overall (Usman, Akhmadi, & Suryadarma, 2007), with small numbers of teachers in rural and remote areas, meaning that those who work there need to spend more working hours at school and more hours teaching face to face than their urban counterparts (Chang et al., 2014; Jalal et al., 2009) and therefore they have less time to focus on professional learning. In addition, sometimes they are forced to teach in subject areas where they

are not qualified and do not have adequate professional support (Luschei & Zubaidah, 2012). The combination of these factors has contributed to low quality teaching and learning in rural classrooms in Indonesia. Compounding this situation is the limited access to professional learning opportunities in general in rural areas (Chang et al., 2014) and, importantly, relevant professional learning that addresses rural teachers' needs in their context (Jalal et al., 2009; Luschei & Zubaidah, 2012).

Kennedy, Tobing and Toruan (2019) examined educational challenges in the border regions of this province and examined data related to the district's educational challenges using five elements: availability, accessibility, affordability, sustainability, and stability. The findings revealed that many schools in these rural regencies have limited basic infrastructure and educational resources, and teachers lack adequate qualifications to teach in their subject areas. The situation is compounded by the schools having ineffective management styles and limited community involvement to support school improvement efforts. These challenges have impacted on the everyday operations of the schools and influenced the teaching and learning activities undertaken in them. Kennedy, et al. (2019) concluded that there is a need to provide high quality teaching and learning for rural students in order to narrow the education quality gap between the eastern and western part of Indonesia and, further, between Indonesia and other countries.

The next section explains the culture and context that need to be considered during the design of an intervention, its implementation and in the interpretation of findings from this research.

1.3.4 Local culture in East Nusa Tenggara Province and its influence guiding this research

Using a PLC is generally seen as an effective approach for improving teachers' knowledge and professional practice in western contexts (Bausmith & Barry, 2011; Bolam et al., 2005; Ingvarson, 2017;

Vangrieken, Meredith, Packer, & Kyndt, 2017). It is yet to be determined if this approach to providing professional learning might be effective in the culturally different context of Indonesia. A culture can be defined as "a system of shared assumptions, beliefs, values, and behaviours in a given group, community, or nation" (Cheong, 2000, p. 209). It can also be "a collective programming of the mind that distinguishes the members of one group or category of people from another" (Hofstede, 2001, p. 9). The 'mind' here refers to "thinking, feeling and acting with consequences for beliefs, attitudes, and skills" (Hofstede, 2001, p. 10).

According to Hofstede (2001), there are five dimensions of national culture differences that can affect people who come from a certain culture in relation to their perceptions and interactions, these being: power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity and long term versus short term orientation (Hofstede, 2001). In addition, Lessem (2001) suggested that there are four cultural types, these being western, northern, eastern and southern cultures, and that these define the values, norms and orientations of a society where the culture is practised (Lessem, 2001). While western society emphasises pragmatic 'sensing', northern society emphasises rational 'thinking', eastern society tends to emphasise holistic 'intuiting' and southern society emphasises humanist 'feeling' (Lessem, 2001). Thus, each society would have its own way of learning, such as active experimentation through 'self-mastery' in the west, abstract conceptualisation through 'mental models' in the north, reflective observation through 'team learning' in the east and concrete experience through 'shared values' in the south (Lessem, 2001).

Indonesia is part of South East Asia, which could be categorised as part of the eastern and southern worlds, meaning that Indonesians tend to have a combination of intuiting and feeling in their national characteristics, which is in line with Hofstede's studies of national cultural dimensions, suggesting that Indonesian society is a collectivist society (Hofstede,

2001). Moreover, people in southern and eastern cultures are assumed to learn through concrete experience and reflective observation that involves team learning and shared values with a community-based orientation (Lessem, 2001). These notions influenced the emphasis on reflective and critical thinking that guided the design of this study, by considering how a different cultural lens may impact the effectiveness of implementing a western approach in the educational context of an eastern culture.

1.3.4.1 High power distance in Indonesia

High power distance refers to the expectation that younger members of society must respect and listen to their elders (Hofstede, 2001; Minnis, 1999). In a high-power relationship, subordinates are expected to listen to their superiors' advice (Kuswandono, 2014a; Liem, Martin, Nair, Bernardo, & Prasetya, 2009, 2011). This relationship dynamic is relevant to the present research where young and older teachers could be interpreted as having unequal power within a PLC. The young teachers are expected to do what their superiors ask them without any objections. This could mean that they might be reluctant to provide feedback to their older colleagues because of the large power distance between them. In Indonesia's high power distance society, the "communication is indirect and negative feedback is hidden" (Hofstede, 2020, p. 2), indicating that this relationship dynamic needs to be considered in planning research that involves communication between colleagues as part of professional learning.

1.3.4.2 A collective society with a sharing culture

Indonesia has been described as a collectivist society (Hofstede, 2001) where people are accustomed to a culture of sharing (Minnis, 1999) where they learn through concrete experience and reflective observation in teams. It has values that are community-based (communitarianism) (Etzioni, 1996, 2003; Hofstede, 2001; Lessem, 2001; Minnis, 1999), suggesting that working in groups, not a new concept for Indonesians, might be effective.

Even though Indonesians do not explicitly refer to their culture as a community of practice, sharing is an expected behaviour as shown by the emphasis on sharing responsibility within the family (Etzioni, 1996, 2003; Minnis, 1999). A study on the reflective practices of a Brunei teacher suggested that Indonesia and other Southeast Asian countries share communitarianism in which "responsibilities to the family and community have more priority than the right of individuals" (Minnis, 1999, p. 177). Indonesian students show a willingness to collaborate with their friends in the classroom (Liem, Martin, Nair, Bernardo, & Prasetya, 2009), indicating that training in groups could also be effective in work situations (Hofstede, 2001), such as where professional learning is conducted with teachers in schools.

Nationally, in Indonesia there is the culture of "gotong royong" or collective work to help one community member and this is evident in most traditional cultures in other communities such as Gorontalo province in Sulawesi (Basalama, 2010). In the context of ENT province, there is a culture of "kumpul keluarga" or family collective meeting which occurs on special occasions in the extended family system. For example, when one family member proposes marriage, the extended families gather to collect money or animals for the wedding. Another example is when there is a death in the family, all the members of the family come and gather money, animals, and traditional ikat weaving to help (Djami, 2012). Therefore, working together is not a new concept for Indonesians in these communities. However, the way in which a team of teachers might work constructively and provide feedback to each other would need to be carefully guided because this is not common practice in professional teachers' practice in Indonesia.

1.3.4.3 Uncertainty avoidance related to maintaining workplace harmony in Indonesia

Uncertainty avoidance refers to how Indonesian people prefer not to show their negative emotions directly in public or in workplaces (Hofstede,

2020). Although they may not like something, they do not show their real feelings in order to maintain harmony in their relationship with their colleagues (Hofstede, 2020). Uncertainty avoidance in terms of work situations refers to common characteristics such as “relationship orientation, innovations welcomed but not taken seriously, precision and punctuality have to be learned and managed” (Hofstede, 2001, p. 170). In the Indonesian context, life is quite relaxed, there is no need to be busy, people cannot express their emotions directly in public, and they are tolerant (Hofstede, 2001). In the case of collaborative work, this could mean that teachers might not provide frank comments or feedback to avoid offending their colleagues, and they might be hesitant to give critical feedback. This could result in the provision of superficial feedback to save face and so uncertainty avoidance needs to be considered in planning for research where collaboration and feedback are a focus.

1.3.4.4 The value of masculinity and femininity

In a country with low masculinity dimension, someone’s status in a workplace need to be maintained. This could contribute to the creation of a different dynamic in a PLC in the Indonesian context. Indonesia has less masculine dimension which means that one’s status or position in the workplace needs to be maintained and respected as a social status symbol (Hofstede, 2020).

In Indonesia status and visible symbols of success are important but it is not always material gain that brings motivation. Often it is the position that a person holds which is more important to them because of an Indonesian concept called “gengsi” – loosely translated to be, “outward appearances”. It is important that the “gengsi” be strongly maintained thereby projecting a different outward appearance aimed at impressing and creating the aura of status. (Hofstede, 2020, pp.3-4)

Many conflict resolutions require negotiation between members of a group (Hofstede, 2020). In Indonesian contexts direct confrontation or feedback is avoided due to maintaining ‘gengsi’ or status in workplace relationships.

This orientation towards maintaining one's status needs to be considered in planning for research in the Indonesian context.

1.3.4.5 Long-term versus short-term orientation

A collectivist society values keeping a long-term orientation (Hofstede, 2001), while western countries tend to focus on a short-term orientation (Hofstede, 2001). A long-term orientation is maintained by building up business networks through families (Hofstede, 2001), and in a school situation could result in teachers seeking a long-term orientation in their interactions with their colleagues. "Indonesia has a pragmatic culture. In societies with a pragmatic orientation, people believe that truth depends very much on situation, context, and time. They show an ability to adapt traditions easily to changed conditions, a strong propensity to save and invest, thriftiness, and perseverance in achieving results" (Hofstede, 2020, p. 5). This long-term orientation needs to be considered in planning for research. All the contextual aspects of culture shape teachers' and students' values, beliefs, and attitudes, and these different cultural layers in Indonesia need to be considered in designing research.

1.4 Researcher's background

I was interested in conducting the current research to improve teachers' teaching quality in order to provide high quality learning for students because of my personal journey as a student, a teacher, a researcher and a woman scholar from the eastern part of Indonesia. I attended schools in ENT province, Indonesia. Growing up, I had great teachers and terrible teachers, as judged by me at the time when I was a student and retrospectively as an educator. Earlier in my schooling journey, I encountered many EFL teachers from primary to high schools (grade 5 – 10) who were passive and employed only textbook-based learning. It was hard to feel motivated to study and during those times I could not see any connection between learning English and my life outside the classroom.

Later, I encountered an EFL teacher in grades 11 and 12 during high school who inspired me to learn English. She employed interesting and challenging tasks in the classroom that encouraged me to develop my creative and critical thinking. She introduced debating competitions and allowed students to ask critical questions in relation to topics. She also developed a competition in the classroom to find the best news reader. I participated and won the competition. Then she encouraged me to participate in different competitions outside the classrooms, such as Scrabble, speech competitions and debating competitions. I participated and won the school Scrabble competition and school and community-based speech competitions. I was excited because I could see the relevance of what I had learned in the classroom to activities outside the classroom. So, EFL lessons became more interesting and relevant for me. I was encouraged to practise my English language and I used it in these different competitions. After that, I decided to study TEFL, became an EFL teacher in 2009 and then taught EFL for 2 years in high schools. Then I continued to pursue further study and applied for a scholarship to study a Master's degree in TESOL in Australia. Following this study, I returned to teach pre-service EFL teachers in a university and applied my newly gained knowledge and skills in ENT province to support rural EFL teachers' professional learning in eastern Indonesia.

However, I have observed that many EFL teachers in the area struggle to provide learning that encourages and inspires students to learn EFL. Moreover, I have observed limited access to educational resources and professional learning that has hindered many EFL teachers in this eastern province from developing their professional knowledge and subsequently improving the quality of their teaching practice to benefit their students' learning experiences and outcomes. This motivated me to engage in PhD research to investigate what could be done to contribute to improving this situation, especially in the ENT province where I studied, worked and live.

Since 2012, the Indonesian Government has been providing around 5,000 scholarships for postgraduate degrees per year and there is a special allocation for people in eastern Indonesia. However, there are limited numbers of scholarship recipients from ENT province in comparison to those from other provinces in the western part of Indonesia. The people from eastern Indonesia miss out on this opportunity because of their low English proficiency. They also cannot use English well and struggle to find good jobs because they cannot communicate well using English. It is very difficult for them to compete with students from the western parts of Indonesia to get scholarships to study abroad because of the combination of the challenges described earlier that are characteristic of the western–eastern rural Indonesia divide. I was most happy and honoured to be selected and I was one of the few women from ENT province to receive this prestigious scholarship (Indonesian Education Endowment Fund/LPDP) to pursue PhD study in Australia to contribute to and serve Indonesia’s teaching community.

I originally come from Indonesia where the research was conducted which gives me insider knowledge of the local culture. This helped me as a researcher to understand how the culture and context shape the perspectives of local teachers and how these perspectives influence their teaching practice. “Generally, insider-researchers are those who chose to study a group to which they belong, while outsider researchers do not belong to the group under study” (Breen, 2007, p. 163). Therefore, I benefited from having both an insider and outsider role when conducting this research. Even though some people might choose the neutral position of not being an insider or outsider, in this particular research, being positioned as both assisted with the process of data collection and data analysis because I had insights and awareness of some unwritten norms or ways of communicating with local teachers during the facilitation process that ensured participating teachers were able to engage fully in the PLC collaboration. In this way I was able to become immersed in the

PLC in order to gain genuine insights into teachers' practice, and to better facilitate the PLC intervention. It also allowed me to understand the participants' culture during the PLC intervention process and to assist with facilitating the PLC in a culturally appropriate way. At the same time, having the outsider position as a researcher gave me a chance to remain objective in the research process and allowed me to both understand the culture (as an insider) and remain objective (as an outsider) at the same time.

The next section focuses on the rationale for this study in view of the contextual information presented earlier in this chapter and links to relevant literature that is further discussed in Chapter 2 "Literature Review".

1.5 Rationale and significance of the study

1.5.1 Rationale of study

In view of the contextual information discussed above and my explorations of extant literature, I present the following reasons to justify the need for the present study and its potential contributions from theoretical, pragmatic, and theoretical perspectives.

- 1.** There is a need to improve Indonesian students' learning outcomes in EFL.
- 2.** There is a need to improve HOT in EFL teaching.
- 3.** There is a need to improve EFL teachers' teaching of HOT by strengthening their PCK for teaching HOT.
- 4.** There is a need to improve teachers' PCK through professional learning.
- 5.** There is a need to improve the opportunities for professional learning of EFL teachers in eastern rural Indonesia and to ensure the professional learning is relevant to their PCK needs for teaching HOT. This professional learning needs to provide active learning and reflective practice, be job-embedded, encourage collective

collaboration, be appropriate for the school context and be able to be sustained in the longer term.

There is a need to improve Indonesian students' learning outcomes in EFL because English is a global language; students in Indonesia need to have good English language proficiency so they can communicate and compete using the English language. One way of improving these outcomes is for teachers to include HOT in EFL instruction. HOT is part of the Indonesian educational goals policy that focuses on developing students' skills of analysing, evaluating, and creating (Kemendikbud, 2016a; Kemendikbud RI, 2019a). Research in the context of EFL teaching and learning has shown that integrating HOT in reading, writing, listening and speaking classes results in improvements in students' English proficiency (Yang & Gamble, 2013; Wang & Liao, 2014; Mehta & Al-Mahrooqi, 2015).

However, it has been found that Indonesian teachers do not focus on teaching HOT in EFL lessons because they do not understand HOT concepts and do not know how to integrate HOT into their lessons (Ginting & Kuswandono, 2020). Consequently, Indonesian students have lacked opportunities to develop HOT in their classes (Chang et al., 2014). These findings indicate that Indonesian teachers need to be supported with professional learning that focuses on HOT and the pedagogy to teach it. This is especially the case for rural EFL teachers.

One approach that has been found to be effective is a PLC because research has shown that collaborative professional learning activities are effective for engaging teachers in active learning and helping them de-privatise their teaching and reflect on their practice (Desimone, 2009). A PLC is also suitable for the rural and remote context in eastern Indonesia because it can be carried out in a school, which means the cost of accessing professional learning is minimised because teachers do not need to travel. A PLC can be used to improve teachers' teaching quality because it encourages collective efforts, which align well with the

collectivist society of Indonesia in which people are used to sharing responsibility within their cultural practice as a community (Etzioni, 1996, 2003; Minnis, 1999). As will be discussed later in the thesis, a framework developed in Australia by Gore et al. (NSWDET, 2003), titled the Quality Teaching Framework (QTF), could be used to structure PLC activities to bridge cultural barriers.

However, many professional learning programs instigated by the Indonesian Government are top-down in the Indonesian context, such as the Teacher Certification Program (Jalal et al., 2009; Kusumawardhani, 2017) and Teacher Professional Education (Pendidikan Professional Guru/PPG) (Mu'in, Al-Arief, Amelia, & Fadilla, 2018). Teachers are expected to receive, comply with, and implement the programs in the schools. Lack of consideration of teachers' contexts, cultures and needs are common. Consequently, those programs create disadvantages for teachers because the programs do not address their immediate needs, nor are they related to their context. Although teachers have spent time participating in these programs, no significant connection has been found between the Indonesian Teachers' Certification Program and students' improved learning outcomes (Kusumawardhani, 2017). This underlines the need to provide professional learning that considers teachers' needs and contexts in rural eastern Indonesia.

The existing research is generally limited to urban or semi-urban areas and there is limited research on teachers' professional learning in rural and remote eastern Indonesia. There is a need to extend the literature about the effect of professional learning on active learning, de-privatised practice, collaboration, and reflective practice that is relevant to rural schools in eastern rural Indonesia (Cirocki & Farrell, 2019; Rahman, 2016). This study sought to gain a deeper understanding of the status of teachers' PCK and their professional learning needs before planning and implementing a PLC intervention and then evaluating its impact on the quality of rural teaching. To do this, a case study method was employed

with five teachers in two rural schools. A PLC approach was chosen because it provides an opportunity for extended, elaborated, and well supported professional learning with the potential to reduce teachers' isolation in terms of professional learning. Working with a small group of teachers provided an authentic and pragmatic PLC context due to teachers in remote places, such as on a small island, having a greater chance to work collaboratively over an extended period of time within their small school contexts.

1.5.2 Significance of the study

There is a gap between western and eastern rural Indonesia in terms of what is known about EFL teachers' PCK, their teaching of HOTS and their use of a PLC for professional learning. This investigation contributes to understanding how a PLC approach to professional learning might help narrow the education quality gap between western and eastern rural Indonesia. In particular this research in rural eastern Indonesia significantly contributes to understanding: (1) the PCK of EFL teachers; (2) the viability and effectiveness of a PLC; (3) how the QTF can be employed in a new context; (4) how video can be used as a tool for reflection within a PLC; and (5) how HOTS can be promoted in EFL teaching.

Despite the Indonesian government's Teacher Certification Program to improve the quality of education and teaching across Indonesia, the education quality gap between the western and eastern parts of Indonesia has been increasing. Most of the research studies in the EFL field in Indonesia have been carried out in the western part of Indonesia (e.g., Hawanti, 2014; Nugroho, 2018; Wulyani, Elgort, & Coxhead, 2019), but there has been little research to investigate ways to support the development of EFL teachers' knowledge and classroom practices in the rural eastern part of Indonesia (e.g., Rinantanti, Rahman, Atmowardoyo, & Bin-Tahir, 2017; Rinantanti, Bin-Tahir, & Aminah, 2019).

Furthermore, EFL teachers in rural Indonesia have limited professional knowledge and pedagogical knowledge related to EFL teaching and learning, highlighting the need for on-going professional education that supports these teachers (Sikki, Rahman, Hamra, & Noni, 2013). Their unsatisfactory teaching performance has been cited as the cause for their students' poor learning outcomes (Rinantanti et al., 2019). One way to improve teachers' teaching quality is through strengthening the development of their PCK. Many intervention studies have been carried out on developing teachers' PCK in science and mathematics education (Berry, Loughran, & van Driel, 2008; Evens, Elen, & Depaepe, 2015; McNeill & Knight, 2013) internationally and in the western part of Indonesia (e.g., Faisal, 2015; Kultsum, 2017; Safitri, Melati, Mukminin, & Hidayat, 2020; Triastuti, 2017), but there has been little investigation of EFL teachers' PCK knowledge in eastern rural Indonesia. It is important to understand how a PLC might facilitate development of the PCK of EFL teachers in eastern Indonesia and help them improve their teaching practice. This investigation aims to fill the gap in the literature related to studying PCK in the field of EFL teaching in rural eastern Indonesia.

Another area of concern is a discrepancy between western and eastern Indonesia related to opportunities for quality professional learning. Teachers in eastern Indonesia have had limited opportunities to attend professional development programs to enhance their English proficiency and knowledge due to school policies that only allow one teacher from each school to attend PD, and due to limited funding for any professional development (Wulyani, Elgort, & Coxhead, 2019). Even if teachers have wanted to improve their professional competency in teaching by pursuing professional development, they have not been able to participate in such programs due to having heavy workloads and there being limited financial support for them to do so (Nugroho, 2018). With this lack of opportunity for EFL teachers' professional learning in rural eastern Indonesia, it is clear that they need opportunities to improve their PCK to teach

effectively. It is important to address this professional learning gap if the teaching quality gap is to be closed in Indonesian EFL classrooms.

The present investigation has focused on professional learning that aims to help EFL teachers improve their PCK for teaching HOT, which is a stated aim in current education policy. At the time of this investigation, the new Education Minister of Indonesia announced new school reforms to promote the development of a collaborative professional learning culture that encourages in-school observation, feedback and reflective practice (Kemendikbud RI, 2019b). This investigation aligns well with this new education reform in the provision of a model of professional learning designed to promote HOT in EFL within the context of PLCs. Such a model has the potential to be adopted in rural areas of Indonesia and could add to the body of knowledge about the sustainability of professional learning in rural areas of Indonesia.

In addition, this research can be seen as having significance extended beyond the context of Indonesia, contributing to the wider context of TESOL/TEFL language education in Asian context. This research will enrich our understanding on how this new approach in PLC could reform EFL teachers' professional learning and improving students' learning in Asian context.

1.6 Broad research aims and research questions of the study

1.6.1 Broad research aims

The present research was guided by the following broad aims:

1. To understand the state of EFL teachers' PCK and their PCK needs for teaching HOT in rural eastern Indonesia.
2. To investigate EFL teachers' instruction about HOT and to promote instruction in HOT in rural schools in eastern Indonesia.

3. To understand EFL teachers' professional learning needs in a rural regency in eastern Indonesia.
4. To improve EFL teachers' PCK to promote HOT with the use of a PLC that employs the QTF as the structure for professional learning activities for teachers in rural eastern Indonesia.
5. To investigate the long-term effect and sustainability of a PLC that uses the QTF as the structure for professional learning activities to improve EFL teachers' PCK for teaching HOT in rural schools in eastern Indonesia.

1.6.2 Research Questions

The overarching research question:

- RQ Study 1. What are the perspectives of EFL teachers about their existing PCK needs for teaching and promoting HOT in rural school students in eastern Indonesia?

The following sub-questions guided Study 1:

- RQ 1. 1 What is the state of EFL teachers' professional learning in rural schools in eastern Indonesia?
- RQ 1. 2 What is the state of EFL teachers' PCK in rural schools in eastern Indonesia?
- RQ 1. 3 What are the beliefs, attitudes, and practices of EFL teachers in relation to promoting HOT in rural schools in eastern Indonesia?
- RQ 1. 4 What are the PCK needs related to teaching HOT of EFL teachers in rural schools in eastern Indonesia?

- RQ Study 2. How does a PLC intervention employing the QTF influence EFL teachers' PCK and practice related to promoting students' HOT in rural schools in Indonesia?

The following sub-questions guided Study 2:

- RQ 2. 1 Has the PLC intervention designed for this study influenced EFL teachers' PCK? If so, in what way?
- RQ 2. 2 Has the PLC intervention designed for this study influenced EFL teachers' PCK related to their beliefs and attitudes about teaching HOT, and their beliefs about students' ability to learn HOT in rural schools? If so, how?
- RQ 2. 3 Has the PLC intervention designed to improve EFL teachers' PCK influenced teachers' instruction to promote HOT? And if so, how/in what way?
- RQ 2. 4 Does teaching of HOT influence rural students' use of HOT in EFL classes?
- RQ 2. 5 How useful is the QTF for structuring a professional learning intervention in the context of Indonesian schools in terms of promoting respectful communication and reflection on lesson planning and teaching?
- RQ 2. 6 Is the use of video-based discussion for EFL teachers' critical reflection on their practice an effective approach in a PLC? If so, in what way?
- RQ Study 3. How sustainable is a PLC intervention to promote teachers' PCK and development of HOT in EFL classrooms in rural schools in Indonesia?

The following sub-questions guided Study 3:

- RQ 3. 1 How sustainable are any gains from a PLC intervention designed to strengthen EFL teachers' PCK and develop their HOT teaching practices in rural areas in Indonesia?
- RQ 3. 2 What are the challenges to sustaining the implementation of a PLC in rural schools in eastern Indonesia?
- RQ 3. 3 What recommendations can be made to promote the long-term sustainability of a PLC in rural schools in Indonesia?

1.7 Structure of the thesis

This thesis is organised in seven chapters. The present chapter explains the background to this research, describes its context and gives the rationale. Chapter 2 reviews the relevant literature pertaining to the range of concepts of interest, such as PLC, teachers' PCK, HOT in EFL and QTF. It also outlines the objectives and research questions designed for the three connected studies reported in this thesis. Each of the studies is reported in a separate chapter which also includes a critical review of literature that is relevant to the study, study method, data analysis and discussion of findings. Chapter 3 describes the methodology of the research. Chapter 4 reports Study 1, in which the pre-intervention phase of this research is described. The focus of interest in this study was to find out the state of EFL teachers' current PCK and PCK needs. There is a discussion of how the pre-intervention data informed and shaped the PLC intervention design and focus which was essential for Study 2. Chapter 5 documents the PLC intervention phase of the research. Chapter 6 presents and discusses Study 3, the post-PLC intervention phase which investigated the long-term effectiveness and sustainability of a PLC. Chapter 7 presents conclusions and recommendations derived from the results of the investigation. References and Appendices are presented following Chapter 7.

1.8 Summary

This chapter has presented an overview of the study. It described the background underpinning the research, the rationale of the study and the cultural factors that needed to be considered in the Indonesian context. This chapter has also provided an overview of EFL teaching and learning in Indonesia and indicated a gap between the quality of education in the western and eastern areas of the country. An explanation of the impact of the disparity on the quality of education in rural eastern Indonesia in general and in EFL teaching and learning was also presented. The rural

context itself has been explained as posing challenges for EFL teachers needing to access high quality professional learning and for students accessing high quality learning. The following chapter, Chapter 2, reviews the research literature concerned with teachers' professional learning, PLC, teachers' PCK, the QTF and HOT. It outlines the significance of the investigation and presents the research objectives and research questions designed for the study.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

The literature review presented in this chapter consists of five sections focusing on the key interests of this investigation. The first section (2.2) discusses professional learning, including quality models. This is followed by a discussion of the pedagogical content knowledge (PCK) of English as a Foreign Language (EFL) teachers and its role in determining teaching and learning quality (Section 2.3). The way teachers' beliefs and attitudes influence their teaching and students' learning is outlined, followed by a discussion of higher order thinking (HOT) in EFL (Section 2.4), the development of teachers' professional agency (Section 2.5) and sustainability of educational initiatives (Section 2.6).

2.2 Teachers' professional learning

In-service teachers are expected to continue their professional learning to provide high quality teaching. Teachers develop knowledge and skills post university education therefore they are required to keep developing and staying up to date to be able to meet the demands of students in their classes, new teaching practices, and new technologies (Brown, 2007; Cochran-Smith, 2011b; Richards & Farrell, 2005). Professional learning activities provide opportunities for in-service teachers to update their knowledge and enhance their practice (Cochran-Smith, 2011a; Desimone, 2009). The trend in professional development research is to move towards a more autonomous, transformative and suitable model (Kennedy, 2014a), because "...learning to teach takes time, and it is never finished" (Cochran-Smith, 2012, p. 122). This approach aligns with the focus of the present investigation, which is to encourage the growth of EFL teachers' PCK within a PLC that allows teacher collaboration, active participation, and reflective practice.

The following discussion is presented in nine sections investigating aspects of teachers' professional learning relevant to this research. First, the significance of professional learning is addressed; then there is an examination of various studies focussing on professional learning and its effect on teachers' knowledge and pedagogy. This is followed by a discussion of features of effective professional learning, then by a review of some key studies on PLC, EFL teachers' professional learning in the Indonesian context and the use of the QTF within a PLC. Next there is a review of literature on the use of video-based reflection (VBR) as a tool in professional learning. Finally, there is an explanation of the roles of a code of conduct and of school leadership in PLC interventions.

Professional learning (PL) or professional development (PD) are used interchangeably in the literature. This investigation will use PL and PD to reflect the term as referred to in the research studies. However, this investigation uses PL when discussing the studies reported as part of this investigation because the word 'learning' reflects the ongoing process of teacher learning.

2.2.1 Significance of teachers' professional learning

Professional learning activities focus on reforming teaching activities so they can contribute to improved learning outcomes for students (Porter, Garet, Desimone, & Birman, 2003). For example, a study investigating teachers' professional learning participation, in relation to students' achievement growth, provided evidence that teachers' professional learning that is focussed on content and teaching strategies is linked to improvements in students' learning (Desimone, Smith, & Phillips, 2013). This was shown when teachers' instruction focused on advanced topics (a HOT task) in mathematics rather than when their instruction focused on basic topics only (lower cognitive demand) (Desimone et al., 2013).

Teachers' professional learning evolves over time, from individual learning as part of their job working with students in their classes, to collaborative

learning with colleagues for professional growth (Hiebert, Gallimore, & Stigler, 2002; Ingvarson, 2017). Stigler and Hiebert (1999) introduced the notion of lesson study, following their examination of educational practice in Japan. In this approach teachers were involved in working collaboratively to improve their lessons in a continuous process of school-based professional development (Stigler, Gallimore, & Hiebert, 2000; Stigler & Hiebert, 1999). As part of the lesson study approach, “teachers meet regularly over long periods of time (ranging from several months to a year) to work on the design, implementation, testing, and improvement of one or several “research lessons” (*kenkyuu jugyou*)” (Stigler & Hiebert, 1999, p. 110). The idea of a continuing collaboration among teachers to improve a lesson is in line with reform-based professional learning activities (Porter et al., 2003), which is beneficial for improving teaching quality and students’ learning because it provides opportunities for teachers to collaborate, practise their learning, observe one another, discuss, and reflect on their teaching in a community of learning that plays a crucial role in developing their PCK. It is able to do this because it uses active learning, has a long duration of learning, and employs collective participation (Borko, Jacobs, & Koellner, 2010; Darling-Hammond & McLaughlin, 1995; Garet, Porter, Desimone, Birman, & Yoon, 2001; Putnam & Borko, 1997, 2000).

Figure 2.1 illustrates the lesson study approach to professional learning and shows its cyclical process.

Figure 2.1 A lesson study cycle based on Stigler & Hiebert (1999)

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Even though lesson study seems to produce a good standardised teaching product (a refined lesson) that supports teachers to improve their teaching quality (Morris & Hiebert, 2011; Stigler & Hiebert, 2016), the time needed to produce the perfect lesson means that it is inefficient for teachers. In addition, it was found that by the time the lesson met the standard, it needed to be adjusted again to address more recent educational demands.

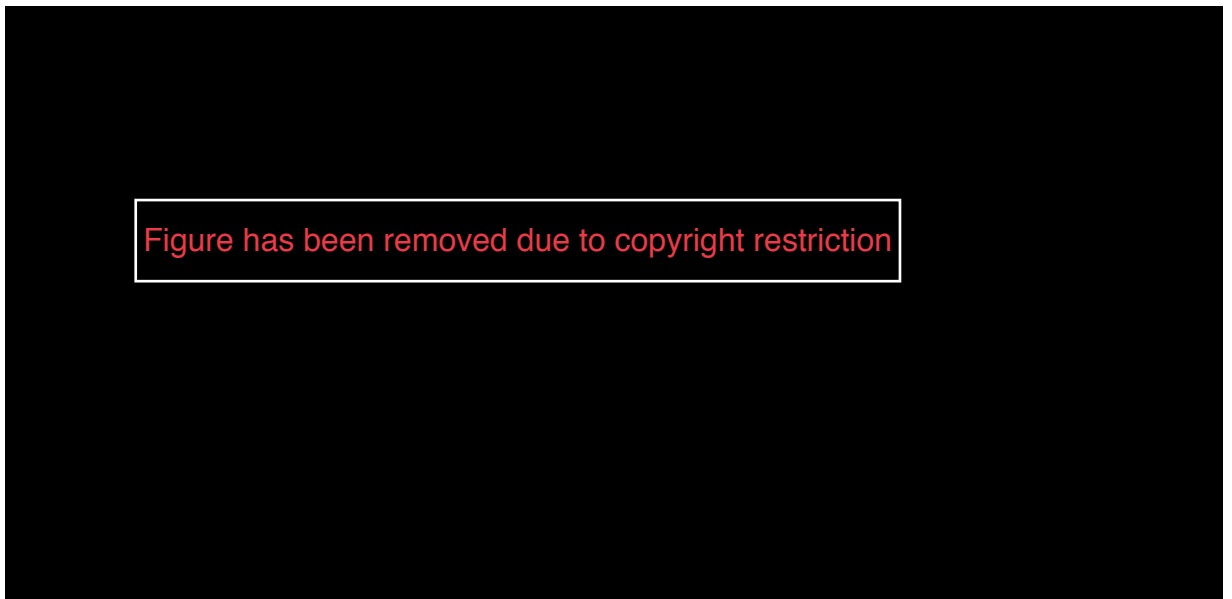
2.2.2 Features of effective professional learning

Effective professional learning can enable teachers to improve their knowledge, beliefs and attitudes and lead to changes in their instruction and to improve student learning. Several elements that characterise effective professional learning are found in the research literature. One model of effective professional learning has been presented by Desimone (2009), who outlined four main steps:

1. Teachers experience effective professional development.
2. The professional development increases teachers' knowledge and skills and/or changes their attitudes and beliefs.
3. Teachers use their new knowledge and skills, attitudes, and beliefs to improve the content of their instruction or their approach to pedagogy, or both.
4. Teachers' instructional changes foster increased student learning (Desimone, 2009, p. 184).

These four steps show the connections between teachers increased knowledge, improved instruction and student learning as a result of teachers' professional development. The rationale for these steps is to show the process of teachers' change and how teachers' knowledge could be increased and practice could be improved if they participate in professional development programs with characteristics such as, content focus, active learning, coherence, duration, and collective participation (Desimone, 2009). This improvement could then contribute to student learning outcomes (Desimone, 2009). Figure 2.2 shows the model proposed by Desimone (2009) depicting the core features of professional development and how they impact on teachers and students.

Figure 2.2 Framework to study the effect of professional development on teachers and students (Desimone, 2009, p. 185)



Desimone (2009) suggested a conceptual framework that outlined the core features of effective professional development in a study detailing the impact of professional development. The features are “content focus, active learning, coherence, duration, collective participation” (Desimone, 2009, p. 185). These features are claimed to be effective in enhancing teachers’ knowledge and skills and in changing their attitudes and beliefs. It is argued that these features all contribute to changing teaching practice in the classroom and can result in improvement in students’ learning (Desimone, 2009; King, 2014).

Effective professional learning focused on content means that the teachers focus on developing their subject matter knowledge or content knowledge that is relevant to their teaching (Garet et al., 2001) or the learning styles or strategies used by students to understand the content of a lesson during a professional learning program (Knapp, 2003; Phillips, Desimone, & Smith, 2011). The next feature is active learning, which refers to the process of teachers actively engaging in a professional learning process by reflecting, evaluating their teaching and learning, or

providing feedback to each other (Darling-Hammond & McLaughlin, 1995; Putnam & Borko, 1997, 2000) and analysing student work (Borko et al., 2010; Knapp, 2003). Another feature is coherence, which means that the professional learning activities have to be aligned with the policy and curriculum that is taught in the school (Borko et al., 2010; Darling-Hammond & McLaughlin, 1995; Garet et al., 2001; Putnam & Borko, 1997, 2000). This is to ensure that the professional learning is relevant to the teachers. The next feature is that professional learning is of longer duration, which refers to teachers having longer participation in the professional learning activities and that it is not a one-off workshop (Borko et al., 2010; Darling-Hammond & McLaughlin, 1995; Putnam & Borko, 1997, 2000). The professional learning program employs collective participation or collaboration which could be through a professional learning community within the school (Borko et al., 2010; Darling-Hammond & McLaughlin, 1995; Putnam & Borko, 1997, 2000).

Active learning refers to PD that affords opportunities for teachers to actively contribute to the knowledge and skills building process through activities such as interactive feedback on teaching demonstrations or review of student work. Coherence refers to PD that is connected to existing curriculum implementations, standards, and policies, as well as teachers' prior knowledge, skills, and beliefs. Content focus refers to PD that increases teachers' expertise related to different knowledge domains of teaching. Collective participation refers to affordances of PD activities that enable participation from teachers in similar local contexts such as teachers from the same grade-level, disciplinary concentration, or school. Duration refers to both the total contact time and frequency of teachers' interactions with the PD environment. (Desimone, as cited in Fischer et al., 2018, p. 108)

A study investigating Desimone's framework suggested that "the comprehensive theoretical framework synthesised by Desimone (2009) is convincing since it contains: 1) an explanation of effective professional development; 2) all the paths from effective professional development to student achievement and; 3) contextual factors" (Kang, Cha, & Ha, 2013, p. 12). Kang et al. suggested that this framework could be used to assess

the effectiveness of professional development programs for teachers and students in the Korean context. They highlighted that contextual factors must be considered to ensure the success of implementation of any professional development programs to improve teachers' knowledge and teaching practice with the goal of improving students' learning (Kang et al., 2013).

Another study in the USA employed Desimone's model to evaluate the impact of a nationwide science professional development program on 7,434 teachers and 133,336 students. It revealed that teachers' PD participation had a positive impact on their teaching practice (Fischer et al., 2018). However, their teaching practice had a small effect on their students' achievement (Fischer et al., 2018). Fischer et al. found that teachers' years of teaching experience, students' characteristics (previous learning outcomes and parents' educational background) and school contextual factors, such as socio-economic status, contributed directly to students' learning. This study suggested the affordances of Desimone's framework for measuring the effect of a professional development program on teachers and students, which is of interest to the present investigation.

A recent study to validate elements of Desimone's framework for investigating the effect of an interdisciplinary professional development program conducted with 204 science teachers and 5,581 students, found that teachers' longer participation in PLC activities contributed positively to their PCK development but that this development varied due to the school context (Fischer et al., 2018; Yang, Liu, & Gardella Jr., 2020). The study found that having a degree in their subject matter contributed to teachers' PCK development and that teachers developed their PCK better in their first four years of teaching (Yang et al., 2020). It also identified that larger class sizes impacted negatively on teachers' PCK due to increased challenges in classroom management (Yang et al., 2020). It was suggested that greater attendance at PLC meetings contributed

positively to teachers' reflective practice and development of their PCK (Yang et al., 2020).

Arguably, context should also be included as one of the core features of effective professional development and not just as a mediating factor, because it refers to "teachers' and students' characteristics, curriculum, school leadership and policy environment" (Desimone, 2009, p. 185). Different contexts offer different challenges for implementing and sustaining professional learning and have an impact on teachers' knowledge and skills (Kang et al., 2013; Yang et al., 2020). This is significant because "to understand teacher learning, we must study it within these multiple contexts, taking into account both the individual teacher-learners and the social systems in which they are participants" (Borko, 2004, p.4). Desimone's framework (2009) provides a useful way to explain findings from a PLC intervention relevant to this investigation.

In 2002, Guskey (2002) also proposed a model to study teacher change as shown in Figure 2.3.

Figure 2.3 Framework for the analysis of teacher change (Guskey, 2002, p. 383)

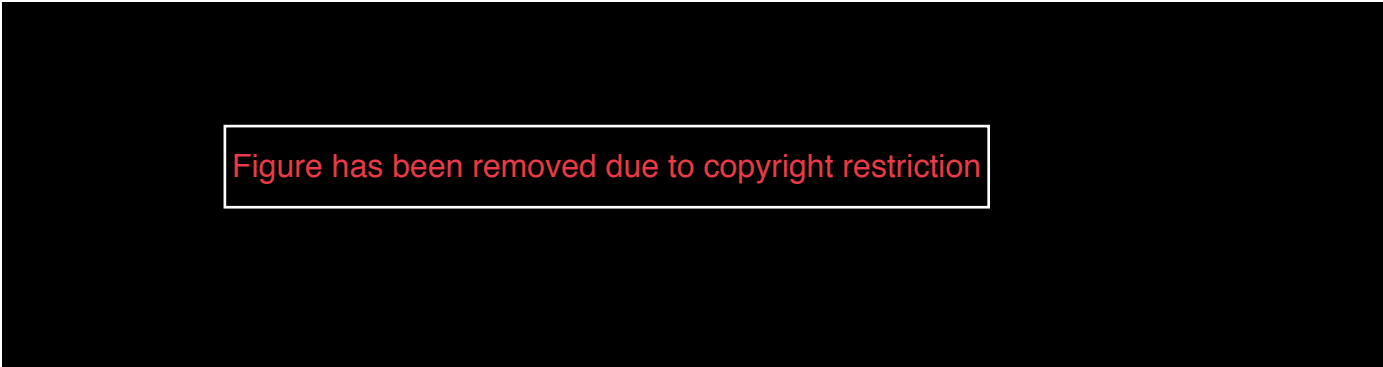


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This framework was designed to analyse the effectiveness of professional development for changing teachers' beliefs and attitudes, however, it was limited to analysing the influence of professional development as a linear

one-way process. It also did not include context as an important factor that influences the effectiveness of the professional development.

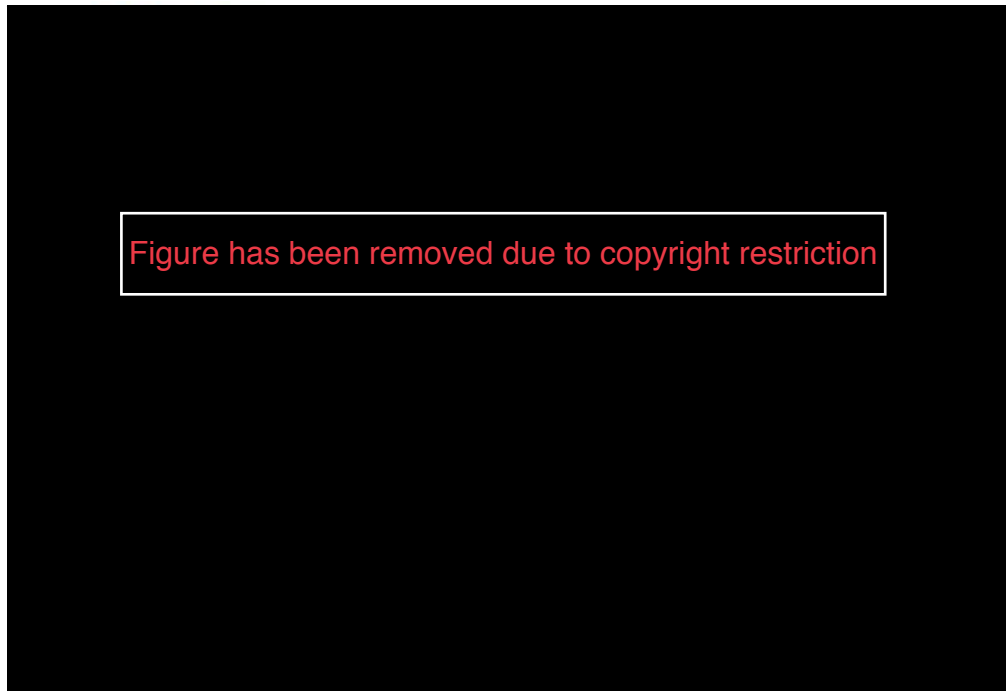
Guskey's assumption was that professional development programs bring:

change in the classroom practices of teachers, change in their attitudes and beliefs, and change in the learning outcomes of students... According to the model, significant change in teachers' attitudes and beliefs occurs primarily after they gain evidence of improvements in student learning. These improvements typically result from changes teachers have made in their classroom practices – a new instructional approach, the use of new materials or curricula, or simply a modification in teaching procedures or classroom format. (Guskey, 2002, p. 383)

It can be seen that Desimone's framework includes a more interactive process, with two-way arrows connecting each component of the model to show two-way interactions between the components in the model. It also provides a more detailed explanation of features of effective professional learning than does Guskey's framework. Although various frameworks were considered as a way of analysing the effectiveness of professional learning experiences, this investigation employed Desimone's framework, which is well established in the research literature.

An effective PLC should not only have the features mentioned earlier by Desimone (Bolam et al., 2005; Borko et al., 2010; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006), but should also be sustainable and extend the impact of an effective professional development program (King, 2016). It is important to address the issue of sustainability of the PLC in order to have more permanent and sustained changes in teachers' teaching and learning practice and overall school improvement efforts. To promote sustainable change there needs to be a systemic approach which involves school leadership support and teachers' active agency. In line with this, King (2016) proposed another framework that maintains effective professional development through systemic factors that support teacher change (King, 2016), as shown in Figure 2.4.

Figure 2.4 Systemic Factors to support teacher change (King, 2016, p. 588)



The systemic factors shown in the figure above refer to three key features that facilitate implementation and sustainability of teacher change (King, 2016). These systemic factors of support (leadership role, change agent/advocate, PLC); PD initiative [innovative] design and impact (structure and success); and teacher agency (openness and willingness, motivation, and deep learning) (King, 2016), highlight the importance of context in sustaining effective professional learning. The first feature is support that teachers receive from school leadership who are acting as agents of change within the schools through providing professional learning communities (King, 2016). Leadership plays an important role in sustaining any implementation of an innovation within a school context (Bredeson, 2000; Zheng, Yin, Liu & Ke, 2016) by aligning and sharing the same values between the principals and teachers (King, 2016). The second feature is initiative design and impact, for which principals could provide organisational structure and culture that contributes to the success of program implementation and sustainability within a school (King, 2016). This can be done through building positive relationships and

effective communication with teachers (Hollingworth et al., 2018), having a clear structure or framework and clear timelines for the PLCs collaboration (King, 2016), and clear programs evaluation (King, 2016). This then encourages teacher agency, which is the third feature that is necessary to ensure that teachers have openness and willingness to implement new practice (King, 2016). To achieve this, the principals must create an environment or policy that encourages teachers' motivation to pursue and engage in deep learning within PLCs so they can enhance their knowledge and practice (King, 2016). These systemic factors contribute to the investigation described here by highlighting the need to consider the context where professional learning is taking place and the role it can play in the sustainability of any changes resulting from teachers' participation.

2.2.3 A Professional learning community (PLC)

Professional learning or professional development is known to be an integral part of efforts to improve teachers' knowledge, practice, and student learning (Desimone, 2009). A professional learning community (PLC) refers to "a range of people based inside and outside a school who can mutually enhance each other's and pupils' learning as well as school development" (Stoll et al., 2006, p.223). A vast amount of literature on effective professional development programs has suggested the value of collaborative methods, such as lesson study, for improving teachers' professional knowledge, practice, and engagement (Stigler & Hiebert, 1999). Other useful approaches include a community of practice (Wenger, 1999), quality teaching rounds (Gore et al., 2015; Gore et al., 2016), and using a PLC (Australian Council for Educational Research (ACER), 2016; DuFour, 2003, 2007; King, 2016). Darling-Hammond (2014) stated that "higher-performing countries intentionally focus on creating teacher collaboration that results in more skilful teaching and strong student achievement" (p. 16). Collaborative professional learning is valuable because it offers teachers the opportunity to share their teaching and

reflect on it in order to improve the quality of their teaching practice (Borko et al., 2010; Cochran-Smith & Boston College Evidence, 2009; Knapp, 2003).

The PLC as a method of teacher collaboration has been found to be an effective way to encourage teachers' professional growth (Borko, 2004; Freeman & Johnson, 1998; Hord, 1997; Shulman & Shulman, 2004; Wenger, 1999). In the USA (Michelen, 2011; Olivier & Huffman, 2016; Scott, 2012; White, 2015), working in a PLC is common practice in education. This concept of working in a community means the focus of the professional learning is not only on an individual teacher but also on teachers in a collective group (Borko, 2004; Freeman & Johnson, 1998; Shulman & Shulman, 2004; Wenger, 1999). Hord (1997) described the features of a PLC as demonstrating supportive and shared leadership, collective creativity, shared values and vision, and shared practice in the context of supportive school conditions. The Organisation for Economic Co-operation and Development (OECD) also outlined the key features of a PLC as being related to educators having a shared vision, and a focus on learning, reflection, and de-privatisation of practice as well as carrying out collaborative activities (OECD, 2013).

A longitudinal survey conducted in the USA to measure the impact of six types of professional learning activities focused on mathematics teaching and on students' achievement growth, identified effective professional learning activities for teachers. The activities provided opportunities for teachers to collaborate by having open discussions about their beliefs, knowledge, and teaching methods in an ongoing way. This collaborative approach appeared to have more impact on improving student achievement than other professional learning activities that did not provide these opportunities (Akiba & Liang, 2016). This finding is similar to other studies that have found it is important to provide professional learning activities which emphasise collective participation and continue over time (Borko et al., 2010; Garet et al., 2001; Putnam & Borko, 1997,

2000). Similarly, another study found that high quality collaboration made a positive impact on teachers' individual performance and subsequently led to higher student achievement (Ronfeldt, Farmer, McQueen, & Grissom, 2015).

However, neither study conducted any observation of teachers' instructional activity in the classroom during the collaboration, relying solely on surveys using teachers' self-reports. Observations need to be conducted to record teachers' instructional practices (Borko, 2004) and identify the type of instruction that leads to higher student achievement. This sort of observation is needed to investigate whether there is a direct link between teachers' collaboration, their teaching practices and improved student achievement.

A comprehensive study in Britain on Creating and Sustaining Effective Professional Learning Communities (EPLC) found that "an effective PLC has the capacity to promote and sustain the learning of all professionals in the school community with the collective purpose of enhancing pupil learning" (Bolam et al., 2005, p. iii). That study employed a questionnaire and aimed to find the essential characteristics of a PLC, factors that help sustain PLCs and effective aspects of PLC practice. The findings suggested that there are several essential characteristics of PLCs including: (1) shared values and vision, (2) collective responsibility for pupils' learning, (3) collaboration focused on learning, (4) individual and collective professional learning, (5) reflective professional enquiry, (6) openness, networks and partnership, (7) inclusive membership, and (8) mutual trust, respect and support (Bolam et al., 2005). These characteristics need to be considered in the planning of any PLC to be used to contribute to teachers' professional learning and practice.

A review by Vescio, Ross, and Adams (2008) of the impact of professional learning communities on teaching practices and students' learning had similar findings and suggested that teachers' collaboration, a focus on

student learning, teachers' authority, and continuous learning were elements of an effective PLC. Therefore, the features of an effective PLC appear to be related to professional development being situated in practice, being focused on students' learning, having an instructional practice model, promoting active learning or teacher inquiry, being carried out in a collaborative environment, being school based, and being ongoing and sustainable (Borko et al., 2010).

In addition, a PLC has been found to facilitate teachers' inquiry into their own practice (Penner-Williams, Díaz, & Gonzales Worthen, 2017) because they have the opportunity to evaluate their own teaching and that of their colleagues within a collaborative environment. As they carry out this inquiry, teachers are exercising "a critical habit of mind, and a way of knowing about teaching that carries across the professional continuum and across educational settings" (Cochran-Smith, 2012, p. 117). Through inquiry in a PLC, teachers are applying HOTS skills as they analyse and evaluate their own teaching practices. In this way they can generate new ideas or teaching methods which are essential if they are to develop their PCK.

A number of research reports from Asia suggest that a PLC could contribute to increasing teachers' professional knowledge and improving students' learning (e.g., Chen, Lee, Lin, & Zhang, 2016; Lee & Kim, 2016; Salleh, 2016; Sun-Keung Pang, Wang, & Lai-Mei Leung, 2016) due to a PLC being based on teachers' daily practice and their students' learning needs (Vescio et al., 2008), with the aim of improving students' learning (DuFour, 2003, 2007). The teachers could reflect on their teaching practice and then provide feedback to each other or they could focus on analysing students' work or learning styles within the PLC (Darling-Hammond & McLaughlin, 1995; Knapp, 2003; Putnam & Borko, 1997, 2000). This active learning process within the PLC facilitates teachers' professional knowledge growth which then impacts on the quality of their practice and student learning within their classroom.

Arguably, a PLC is different from traditional approaches to teachers' professional development and can reform teacher professional learning (Vescio et al., 2008) because this approach provides opportunities for teachers to enhance their professional knowledge through collaboration with their colleagues in their own teaching context (Borko et al., 2010). For this reason, the present investigation considered a PLC as the setting for encouraging development of teachers' PCK.

In further support of a PLC approach in an Asian context, a questionnaire study conducted in Taiwan found that most schools valued having a shared vision with supportive and shared leadership and indicated that they mostly mediated the building of trust between teachers in a PLC which allowed them to work collectively (Chen et al., 2016; Chen & Wang, 2015). Similarly, a case study in China that used in-depth interviews and classroom observations of three EFL teachers engaged in a PLC in a middle school in Shanghai reported that, "collaboration is an essential element in teacher learning activity, a supportive, open, and flexible community is a vital factor to facilitate the collaboration" (Cheng & Wu, 2016, p. 9). This adds weight to the need to develop a supportive environment within Indonesian schools to ensure a PLC can be sustained.

Likewise, a survey study conducted in the Chinese educational context (Zhang & Sun-Keung Pang, 2016) reported features that affected a PLC were related to "collaborative learning, professional competency, facilitative leadership, having structural support and overcoming organizational barriers" (p.224). Interestingly in that investigation, Mianyang teachers (a regional area) indicated that collaborative learning and facilitative leadership led to better PLC development. On the other hand, teachers in Shanghai (an urban area), who were perceived to be more competitive, considered working in groups to be less effective. The researchers concluded that different economic, social, and cultural contexts accounted for the disparities in results between urban and regional schools in China (Zhang & Sun-Keung Pang, 2016). These

findings suggest that a collaborative PLC approach is more effective in rural contexts, such as those of interest in this present investigation.

In further support for the value of PLCs in Asian contexts, a comprehensive literature review (Lee & Kim, 2006) comparing data on PLCs in South Korea and the OECD's Teaching and Learning International Survey (TALIS) (2008), found that PLCs shared similar features. These included: "shared visions, values, norms, and responsibilities, a focus on student learning with academic support, and professional learning from various collaborative activities" (p.272). Lee and Kim (2016) were not able to identify reflection and de-privatisation of teaching in Korean PLCs and reported that teachers said that their school culture did not allow de-privatisation of teaching and reflective practice in their professional learning. This implied that the school culture would need to change if it was to allow teachers to open their classrooms for observation and promote collaboration with their colleagues. The schools were also required to acknowledge the importance of school-based PLCs to support professional learning, but the lack of active learning during collaboration activities could have influenced the effectiveness of these school-based PLCs. These results suggest that there might be variations among PLCs across countries due to different contexts (Lee & Kim, 2016), therefore, the present study hypothesised that a PLC carried out in Indonesian schools might have results differing from existing PLC studies due to Indonesia's specific culture and context.

A study in Singapore suggested that the role of a facilitator is significant for ensuring that a PLC will be able to support members to make changes in their classroom practices (Salleh, 2016). The study also identified principles related to PLC conversations, including the need for respect for the individual teacher's autonomy, protection of each teacher's well-being, and the promotion of teachers' collective identity. The study also found that although conversations might occur naturally in the PLCs, there was a need to structure the conversations (Salleh, 2016) and guide

them to make sure they had a positive impact on teachers' teaching and students' learning. These findings highlight the importance of facilitating safe and supportive environments for teachers in PLCs to ensure that they are able to share and discuss their practice without fear of being criticised (Salleh, 2016).

Another study investigated key features contributing to strong professional learning communities across Hong Kong Primary Schools and found that schools with strong cultures of sharing had leadership roles that supported the practice of a PLC and had developed a strong focus on students' learning needs (Sun-Keung Pang et al., 2016). However, the design of that study did not include observations of teachers' practice within the PLCs and relied on self-reported data only. If observations had been included, the data may have been comprehensive enough to capture the features of strong PLCs across different schools in Hong Kong (Sun-Keung Pang et al., 2016).

The studies discussed in this section highlight the important influence on PLCs of school cultures (sharing knowledge, information, and practices) and having a supportive environment (leadership roles and infrastructure). When these were present, it was found that teachers maintained their collaboration, which resulted in better student learning outcomes. It can be concluded that the practice of PLCs will be effective or ineffective depending on the culture of each school. Therefore, it is important to understand that the practice of PLCs in different contexts and across countries might vary. Multi-level cultures, that is, national cultures, community cultures, school cultures and classroom cultures (Cheong, 2000) could contribute to different results and influence the effectiveness of a PLC.

With most recent studies into PLC aiming to find their effective features (e.g., Chen et al., 2016; Salleh, 2016; Sun-Keung Pang et al., 2016), it is interesting to note the finding that only a small number of studies provide

comprehensive evidence of the way PLCs contribute to the growth of teachers' PCK (or their instructional practices), leading to increases in students' learning outcomes. This shortage of research on the causal relationship between PLCs, teachers' instructional practices and students' achievement (Vescio et al., 2008) suggests there is a need for more research on how PLCs impact on teaching practices and students' learning. The current investigation aimed to contribute to the research literature by seeking evidence of the impact of a PLC on teachers' professional knowledge and practices, as well as on students' learning.

In TESOL professional development there has been a transformation from short professional development programs to teacher-centred programs that allow teachers to contribute to activities through designing the professional development, learning about their own practice and reflecting on their teaching and their colleagues collaboratively within a professional learning community (Crandall & Christison, 2016). For example, TESOL teachers collaboratively engage to plan a lesson, observe the lesson, reflect and revise the lesson within a lesson study or professional learning community (Crandall & Christison, 2016). There has been a movement toward more social professional learning activities for TESOL teachers. This is because the benefits of collaboration in their professional learning have been recognised. Thus, one of the focuses of this investigation is to evaluate the impact of PLC collaboration on EFL teachers' professional learning.

An advanced database search conducted in SCOPUS, PROQUEST and Taylor and Francis to identify the literature on PLCs found that studies on teachers' professional collaboration in Indonesia are rare. Even though some studies have been conducted in western Indonesia (e.g., Cirocki & Farrell, 2019; Widodo & Allamnakhrah, 2020), teachers' professional learning in eastern Indonesia remains under-explored. Therefore, this study responds to the urgent need to provide an understanding of

professional learning through the use of PLCs in remote areas of eastern Indonesia.

2.2.4 EFL teachers' professional learning in Indonesia

This section explains the policy and reality of teachers' professional learning in Indonesia.

The Indonesian government's policies on teacher education standards state that teachers should hold a Bachelor's degree in education and pass the Teacher Professional Education Program (PPG) (Kemenristekdikti, 2017; Peraturan Pemerintah, 2008; Presiden Republik Indonesia, 2005). The Indonesian government, through its policy, obliges teachers to be professional and have the capability to plan learning, conduct learning activities, evaluate the results of learning and be able to guide and train their students (Presiden Republik Indonesia, 2003). Indonesian teachers need to have four competencies, these being pedagogical, personal, social, and professional (Jalal et al., 2009). These competencies are also required for EFL teachers to be able to conduct their job professionally and are aligned to the professional knowledge that teachers should possess as part of their PCK for effective teaching (Faisal, 2015). Teachers also should possess a teaching certificate which can be gained through the process of professional certification (Presiden Republik Indonesia, 2005). However, it has been found that Indonesian teachers lack different knowledge bases that are necessary to support their teaching (Chang et al., 2014; Jalal et al., 2009; Ragatz, 2015; Ree, 2016), with the result that there is a gap in teachers' knowledge that is impacting the quality of teaching generally in Indonesia, and in the EFL field, particularly in the eastern part of Indonesia (Rinantanti, Bin-Tahir, & Aminah, 2019).

The government launched the teacher competency test (UKG) to measure teachers' competency as professional teachers (Kemendikbud, 2012). The results have been found to be below the national standard in many

provinces in Indonesia, especially in East Nusa Tenggara (ENT) Province, which is the site of this study (Pello, 2016; Radar NTT, 2015; Redaksi Timor, 2016). In 2019, the average teacher competency test result from ENT province was only 50.34 (out of 100), which was below the national average standard of 55/100 (Kemendikbud, 2019). More specifically, the result showed that teachers' pedagogical knowledge score was 48.27 and their professional knowledge score was 51.24 in ENT province (Kemendikbud, 2019). This low result revealed an urgent need for teachers in ENT to improve their professional knowledge to provide effective teaching for students. This issue was taken up in this study by providing the opportunity for EFL teachers in a rural regency in ENT to enhance their teaching competence and by providing them with the professional support to develop their PCK for effective teaching through participation in a PLC.

Reform efforts to improve the quality of education in Indonesia have been carried out by The Ministry of Education and Culture (MoEC), with one study (Kusumawardhani, 2017) conducted to investigate whether a teacher certification program in Indonesia resulted in better teaching and learning (2007 and 2008). It revealed that the certification program employing portfolio assessment did not necessarily result in teachers demonstrating better teaching. This effort to reform education quality did not produce the expected outcome of improving teacher quality and increasing scores on international tests such as PISA and TIMSS, and highlighted that one-off teacher certification was not enough to improve education quality. This result suggests that there is a need for on-going professional learning to ensure high quality teaching is provided in classrooms; a PLC intervention could accommodate this need.

The recent regulation Education Minister Policy of the Republic of Indonesia Number 37 Year 2017 about the certification program for Indonesian teachers, called *Pendidikan Profesi Guru (Program PPG)* or Teacher Professional Education Program, states that teachers are obliged

to take the UKG test after completing a three-month program. Teachers who pass the test are given their teaching certificate and need to teach for at least twenty-four hours per week. Once they have the certificate, they are entitled to some financial benefits as professional teachers, such as receiving a double payment for their monthly salary to support their professional development (Kemendiknas, 2007b). In order to qualify for the certificate, teachers are required to follow a three-month program designed to develop their competency as professional teachers by strengthening their competency in relation to pedagogy and to personal character relating to their morality, social and professional concerns (Peraturan Pemerintah, 2008). Unlike teachers in Australia who are obliged to renew their teaching registration every three years and are required to have at least 60 hours of mandatory professional learning completed within each 3-year period (Teachers Registration Board of South Australia, 2019), Indonesian teachers are only required to complete the teacher education program once during their teaching career and do not need to renew their teaching certificate. Moreover, the Australian government classifies teachers into four career stages of graduate, proficient, highly accomplished and lead teachers (Australian Institute for Teaching School Leadership Limited (AITSL), 2011; NSW Education Standard Authority, 2012), while in Indonesia there are no such classifications of teaching proficiency. After completing a single PPG program, Indonesian teachers are considered proficient and are left alone to pursue their own professional learning.

The government has established Teacher working groups – *Kelompok Kerja Guru (KKG)* and Subject Teacher Discussion Forums – *Musyawarah Guru Mata Pelajaran (MGMP)* (Direktorat Profesi Pendidik, 2008) for the purpose of enhancing teachers' knowledge of content, developing a syllabus, planning lessons, and developing teaching strategies. The intention is that groups and forums will assist teachers to share and exchange knowledge and skills with their colleagues, and in this process

revise their teaching practices (Direktorat Profesi Pendidik, 2008). In 2009 there were around 15,000 MGMP groups throughout Indonesia (Jalal et al., 2009). Some MGMP groups worked well but some, especially in rural areas, did not survive due to a lack of expertise, guidance, financial support, and strong leadership (Jalal et al., 2009). Research has shown that professional learning groups in rural areas lack structure and focus (Wang, Wang, Li, & Li, 2017), suggesting that the teachers' group (MGMP) may be an ineffective way of facilitating ongoing professional development in the Indonesian context. In addition, they are likely to fail if regular funding is not available, the group does not focus on lesson quality improvement and if support for teachers is lacking from the local educational stakeholders (Chang et al., 2014). Despite the many efforts of the Indonesian government, Indonesian students in rural areas continue to show lower outcomes in international tests, adding urgency to the need to provide rural teachers with the opportunity to develop their professional knowledge and practices by working in collaboration with their colleagues in the context of their own schools.

2.2.5 The PLC with QTF

This section introduces the framework that guided this intervention study, the QTF that was developed by the New South Wales Department of Education and Training in Australia (NSWDET, 2003). It shows how the QTF may be used to guide the development of teachers' PCK related to teaching HOTS, and for developing teachers' beliefs and attitudes during a PLC intervention.

As discussed above, a PLC has been found to be a powerful way to encourage professional learning and collaboration among teachers. However, not all PLCs lead to positive changes, because if there is not a strong focus on improving the quality of teaching and enhancing students' learning outcomes, it becomes just a social gathering that may not lead to improvement in teaching practices. Each meeting in a PLC should be relevant for teachers' professional growth, the improvement of their

teaching and for enhancing students' learning. Responding to this need for structure, the present study used the QTF to guide a PLC intervention.

The QTF is a tool designed to facilitate comprehensive discussions and dialogue in a PLC to build strong and positive learning collaboration among teachers (Bowe & Gore, 2015; Gore et al., 2016; NSWDET, 2003). The QTF (NSWDET, 2003) was developed from the Productive Pedagogy (PP) framework (Gore, Griffiths, & Ladwig, 2004; Ladwig, 2007) which built on the work of Newmann, Marks, and Gamoran (1996). The PP is a framework for developing teaching practice in the four dimensions of "intellectual quality, relevance, supportive classroom environment and recognition of difference" (Gore, Griffiths, & Ladwig, 2004, p.378), all of which can be found in regular classroom practice (Gore, 2001; Gore, Griffiths, & Ladwig, 2004). The Queensland School Reform Longitudinal Study research team (Ladwig, 2007) used the PP framework widely and developed the QTF (NSWDET, 2003) to respond to the limitations of the PP framework.

The QTF provides a knowledge-based approach to teaching, teaching observations and teachers' reflection. The QTF dimensions of intellectual quality, a quality learning environment, and their significance for students' learning were developed with the aim of improving the intellectual work of teachers, as well as acknowledging the influence of social aspects on teaching and learning (Gore & Bowe, 2015; Gore et al., 2015). The QTF has provided a new way of focusing collaboration in a PLC (Bowe & Gore, 2016) because it facilitates teachers' consideration of different elements that are necessary to produce high quality lessons through the process of planning, teaching and then reflecting on a taught lesson.

The QTF dimensions represent the aspects of content knowledge, general pedagogy, curriculum knowledge, knowledge of learners and knowledge of their context which are all part of teachers' PCK. These dimensions can

be used to focus lesson planning, clarify the observation process, and define teachers' reflection on their practice. An important consideration for this investigation was the suggestion that the QTF had the potential for 'successful replication' in places outside Australia (Gore et al., 2015, p. 91).

The first QTF dimension is intellectual quality, which is consistent with promoting HOTS in the knowledge dimension (factual, conceptual, procedural, and metacognitive knowledge) (Gore et al., 2015; Krathwohl, 2002; NSWDET, 2003). Within the intellectual quality dimension, HOTS is one of the elements of the QTF that seeks to develop critical and creative thinking in relation to important ideas within a lesson (NSWDET, 2003). This is relevant to one of the main focuses of Indonesian education policies within the context of the study which is to promote HOTS (Kemendikbud, 2016a).

The second dimension of the QTF is the quality learning environment, which outlines the need for a supportive and positive learning environment that encourages students' learning of HOTS; summarised as analysing, evaluating and creating (Krathwohl, 2002; NSWDET, 2003; Seaman, 2011; Soleimani & Kheiri, 2016). This dimension also supports teachers to consider providing a safe environment for teaching and learning (Harmer, 2007; NSWDET, 2003). The third dimension of QTF is significance, which draws attention to students' context and culture and the need for teachers to take into consideration students' backgrounds as they prepare their lessons (NSWDET, 2003). The dimension of significance assists teachers to make connections with students' prior knowledge, which can lead to more meaningful learning in the classroom.

Using the QTF (NSWDET, 2003) within a PLC has the potential to reduce the power distance issue within Indonesia's collectivist society, because all teachers would be able to share their feedback openly by referring to the fixed guidelines (Gore et al., 2016; Hofstede, 2001; Minnis, 1999). In

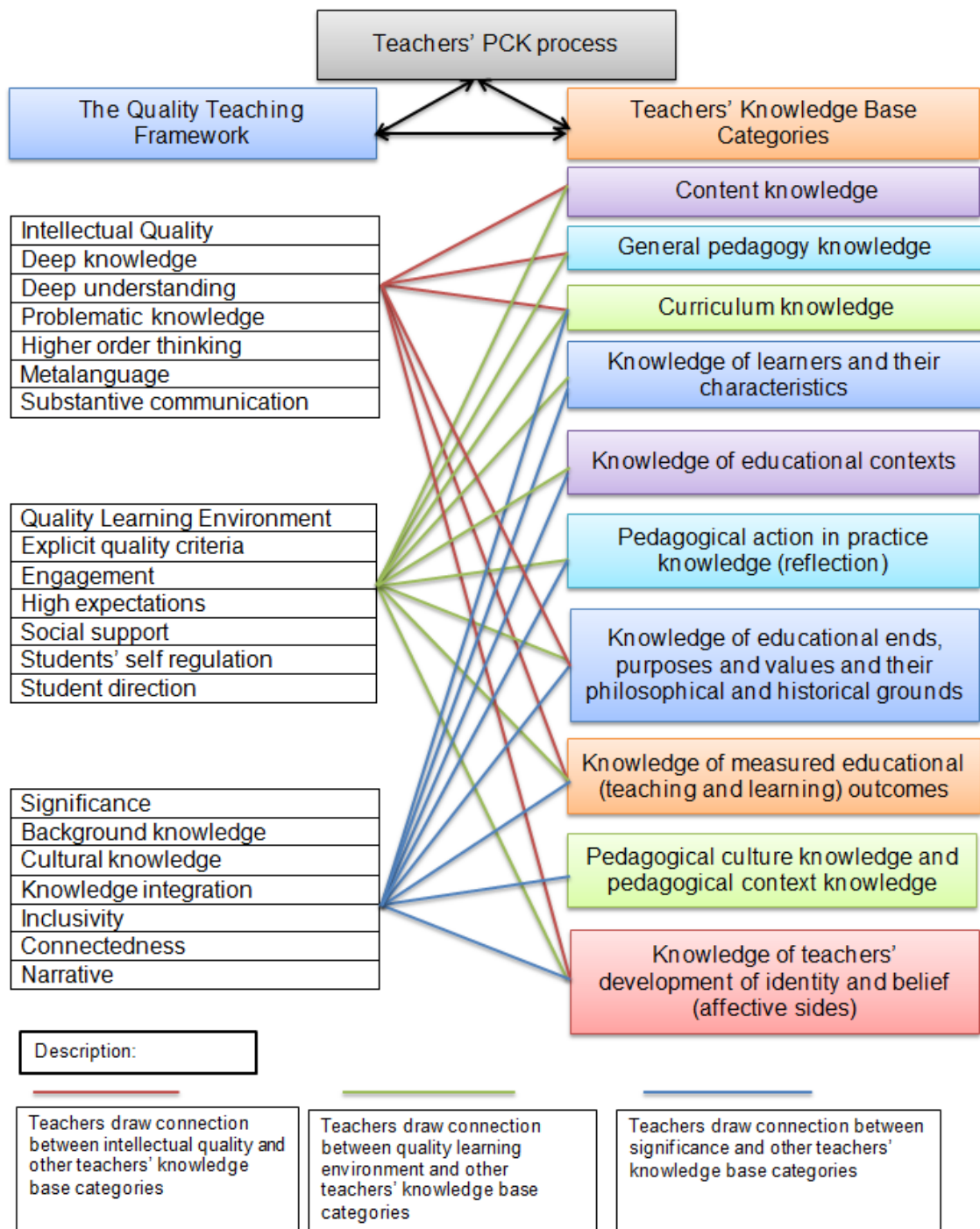
this way, the QTF provides a structure for professional conversations and can be used by teachers as a self-reflection tool (NSWDET, 2003). The three dimensions of the QTF represent the areas of teachers' professional knowledge and practice which are embedded within teachers' PCK (Ball et al., 2008; Grossman & Richert, 1988; Gudmundsdottir & Shulman, 1987; Segall, 2004; Shulman, 1987) which is "built with and builds upon" different teacher knowledge categories in order to produce high quality teaching practices (Gudmundsdottir & Shulman, 1987, p. 60). The QTF was employed in this study to guide participating teachers' conversation, lesson observations, and their reflection on their practice within a PLC.

In this research, connections are made between the QTF dimensions and teachers' overall PCK (Gore & Bowe, 2015; Gore et al., 2016; NSWDET, 2003). The elements within these dimensions provide a knowledge-based structure for teaching (Shulman, 1987, 2015) which can help teachers to integrate their knowledge for teaching as they plan, teach and reflect within a PLC (Gore et al., 2017). Thus, the QTF dimensions provide a structural approach to encouraging the growth of teachers' PCK with the aim of contributing to effective teaching. PCK is a complex and interconnecting process that teachers develop over time in their practice. It is influenced by each teacher's identity and their beliefs about teaching (Shulman, 1987, 2015).

While the connections between the QTF and teacher knowledge categories might be complex, within this Indonesian study the connections are explained as a process of PCK. For example, the teachers can employ the intellectual quality dimension to include and interrogate their content knowledge, general pedagogical knowledge, curriculum knowledge, knowledge of education ends, knowledge of measured educational outcomes, and knowledge of teachers' development of identity and beliefs during preparing, teaching and reflecting on a lesson. Furthermore, the quality learning environment dimension can facilitate teachers to think about and include knowledge of learners and their characteristics,

knowledge of educational contexts, and pedagogical actions in practice or reflection. Finally, the significance dimension can enhance teachers' considerations of pedagogical culture knowledge and pedagogical context knowledge in their teaching practice. Figure 2.5 shows the connections and the process of using the QTF to encourage teachers' PCK by drawing on different categories of knowledge within the PLCs.

Figure 2.5 The connection between QTF and teachers' knowledge categories within teachers' PCK process adapted from the QTF (Gore et al., 2015, p. 83; NSWDET, 2003) and Teachers' Knowledge Base (Shulman, 1987, 2015) model, and designed for this study



The QTF can be an effective framework for guiding the focus of PLC meetings that aim to improve teachers' PCK and develop students' HOT.

The framework provides a structure for professional conversations and a tool for teachers' self-reflection (NSWDET, 2003). As noted earlier, the QTF guide (NSWDET, 2003) could also be useful for reducing the power distance issue that is predominant within Indonesia's collectivist society (Hofstede, 2001; Minnis, 1999) by assisting teachers to participate fully in professional conversations and reflective practice within a PLC. This research contributes to studies using the QTF outside the Australian context where it was developed.

2.2.6 Implementing the QTF

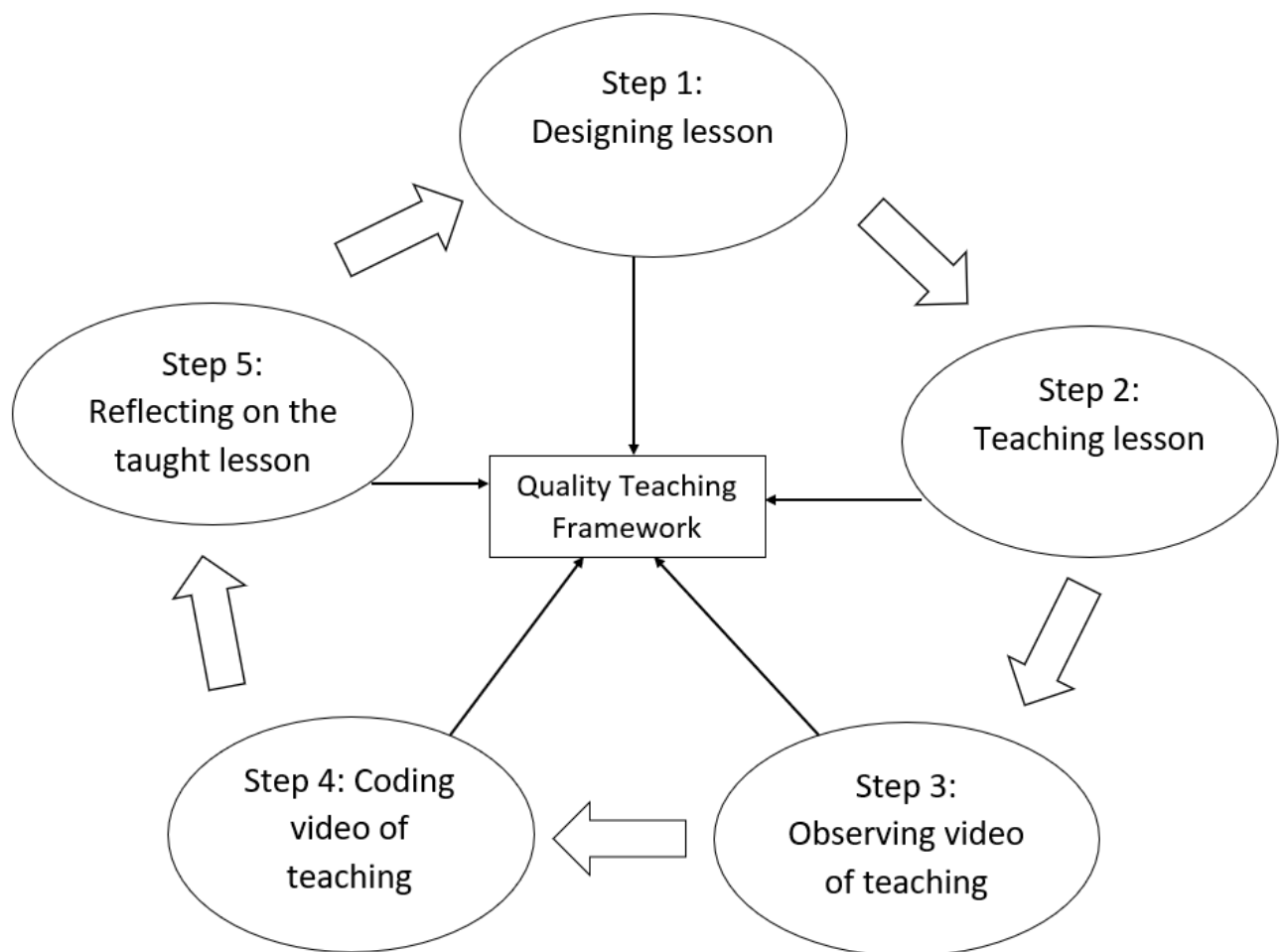
When it was being developed, the QTF was used in Quality Teaching (QT) Rounds to support teachers' professional learning (Bowe & Gore, 2017; Gore & Bowe, 2015; Gore, Bowe, & Elsworth, 2010; Gore et al., 2017; Gore et al., 2015; Gore et al., 2016; Bowe, Gore, & Elsworth, 2010; Miller et al., 2019). In QT Rounds, the teachers participated in three main activities in the context of a PLC. These were:

(1) discussion of a professional reading, chosen by a PLC member, designed to support the group in developing a shared basis for their professional conversations; learning more about each other's beliefs and values pertaining to teaching and learning, and exploring implications of policy and school initiatives for their practice (typically 1 hr); (2) classroom observation, in which one PLC member teaches a lesson that is observed by all other members of the PLC (a full lesson length, typically 40–80 min); and (3) individual coding (usually 30 min) followed by group discussion of the lesson by all PLC members, including the observed teacher (typically 1 to 2 hr), using the Quality Teaching pedagogical framework. (Gore & Bowe, 2015, p. 78)

Although this approach proved useful in the context of Australian schools, adaptations were needed in the context of Indonesian rural schools, where teachers have limited time for professional reading due to the demands on their time, and because there is a shortage of teachers in these areas. In addition, it can be difficult for teachers to access current literature. The present research contributes to QTF studies outside the

Australian context by adopting and adapting it within a PLC in the Indonesian context (Figure 2.6).

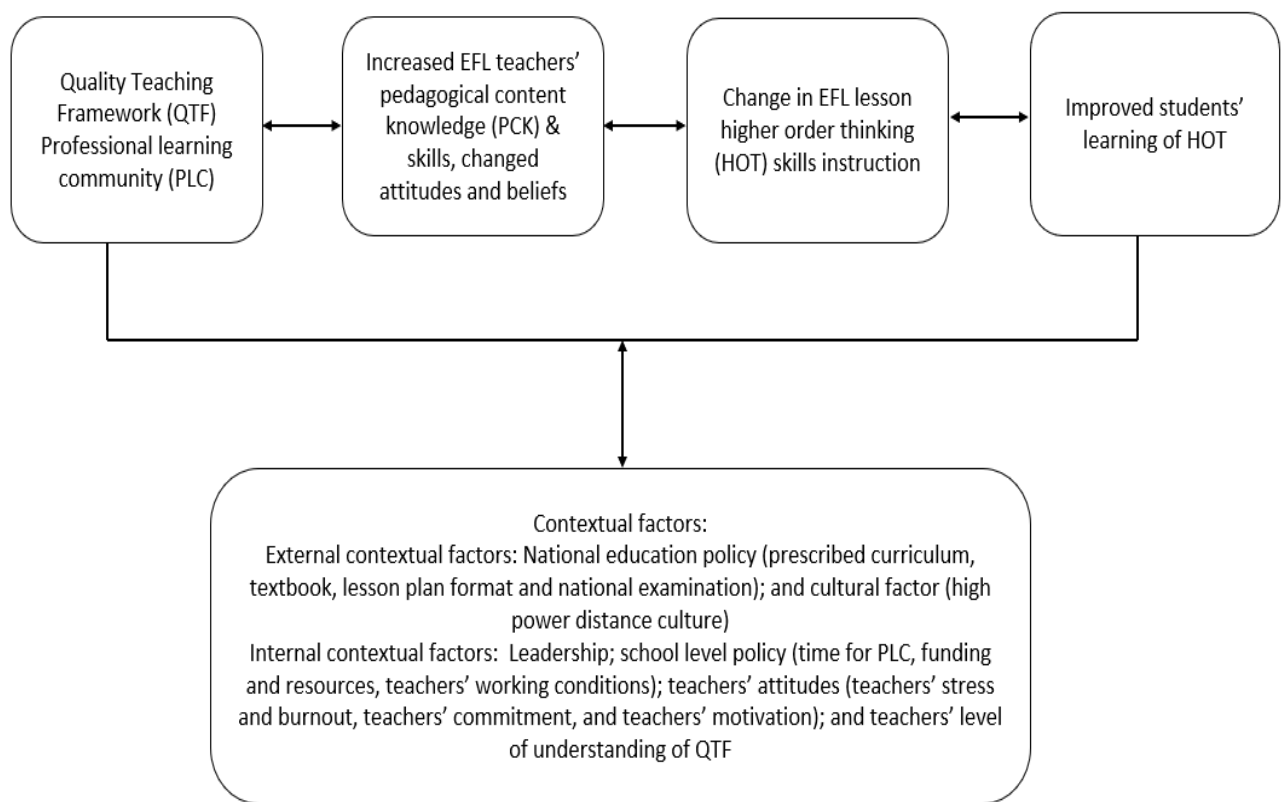
Figure 2.6 The model developed and adapted for the PLC intervention in the present study based on the QTF (NSWDET, 2003), the QTR (Gore et al., 2016) and lesson study (Stigler & Hiebert, 1999; Stigler & Hiebert, 2016)



The PLC model (Figure 2.6) provides opportunities for teachers to design lesson plans, teach their lesson, observe lesson videos, evaluate lesson videos, and reflect on the lesson collaboratively. In the model adopted for this study, this step was replaced with planning lessons collaboratively in the PLC. This was to respond to the need identified from teachers' survey responses and pre-intervention interviews. This PLC model was designed to enhance teachers' PCK and change their beliefs and attitudes toward promoting HOT in their EFL lessons, leading to more HOT learning for

students. Figure 2.7 shows a model detailing how the QTF PLC intervention aimed to enhance teachers' PCK, skills, attitudes and beliefs, HOT instruction, and students' learning of HOT in EFL lessons. This model of PLC impact was developed from Desimone's framework to study the effect of professional development on teachers and students (Desimone, 2009, p.185).

Figure 2.7 The proposed framework of PLC and its impact on teachers and students' learning HOT



The PLC is an appropriate setting for professional learning in the context of rural Indonesia because its features align with those of effective professional learning proposed by Desimone (2009). These features guided the evaluation of the effectiveness of the PLC on teachers' PCK, (knowledge, skills, beliefs and attitudes) and can be used to assess whether participation in a PLC led to changes in teachers' practice and student learning outcomes related to HOT.

2.2.7 The use of VBR in a PLC

Video-based reflection (VBR) refers to the use of video recordings to allow teachers to observe their own practice or that of their colleagues and to encourage productive discussions among teachers during professional learning (Arya, Christ, & Chiu, 2016; Christ, Arya, & Chiu, 2017; Gaudin & Chaliès, 2015). Classroom observation is useful for developing teachers' PCK, however it can be difficult for teachers to observe and be observed by their colleagues because of their overlapping teaching schedules. The use of video recordings can allow teachers to observe their own practice or that of their colleagues. Many researchers and practitioners have used video recordings of teaching practice to encourage productive discussions among teachers during professional learning in different fields, such as in mathematics, science, literacy, music, and EFL (Arya, Christ, & Chiu, 2016; Christ, Arya, & Chiu, 2017; Gaudin & Chaliès, 2015). Video is used widely in professional learning to help teachers' reflective practice, because it has the unique function of allowing teachers to review teaching strategies, students' engagement in activities and students' interactions with their peers and teachers during lessons.

Reflective practice is an integral part of teaching and teacher professional learning in order to provide better quality teaching and learning experience for students (Cambridge Assessment, 2018). Kolb's (1984) learning cycle consists of concrete experience (teachers try to do a new approach for the first time), reflective observation (teachers observe the experience and evaluate it), abstract conceptualisation (teachers investigate actively their knowledge, their practice and identify areas of improvement from their experience, educational literature/research and their colleagues) and active experimentation (teachers then implement the new ideas from their active learning and reflection in their teaching). Schon (1991) introduced the reflective practice model where teachers carry out 'reflection in action' which refers to the process of reflecting during the lesson in order to adjust approaches immediately to meet the

needs in the classroom directly. 'Reflection on action' refers to reflecting after the lesson in order to improve teaching approaches for future practice. In this investigation, during the VBR teachers were encouraged to reflect on their classroom practice by evaluating their strengths and limitations after the lesson in order to improve their practice.

VBR can encourage teachers' pedagogical growth because they are able to see evidence of their teaching and how it impacts their students' learning. This can result in them changing their beliefs and assumptions about their teaching methods. In studies where teachers have used classroom videos to help them reflect on their teaching, positive outcomes have been shown for teacher development (e.g., Borko et al., 2008; Seidel et al., 2011). For example, Borko et al. (2008) found that after reviewing their classroom videos, teachers had more productive discussions about student learning, the subject matter covered, and their pedagogy and they became more reflective after sharing critical feedback. Seidel found that teachers who watched their own teaching videos benefitted from this activity because they actively reflected on their instruction which impacted on their motivation to assess their own teaching (Seidel et al., 2011). In addition, videos have been found to reduce professional isolation and allow teachers to see the practice of other teachers for the purpose of stimulating professional discussion (Jaworski, 1990). VBR has enabled teachers to re-invigorate their approach to encouraging students' active participation in learning (Cutrim Schmid, 2011) and has been found to be a useful way of reminding teachers of specific activities occurring in their busy classroom and of helping them gain new insights into their teaching (Tripp & Rich, 2012). When involved in reflective practice, teachers were more willing to adapt their teaching practices because they could identify elements that needed to be changed. They also reported that video analysis helped them refine their practice because they received practical and contextual feedback during group discussions (Tripp & Rich, 2012).

Moreover, VBR can assist teachers to track their development throughout their practice because they can compare their teaching over time. Being able to evaluate their own performance provides opportunities for teachers to review their beliefs and assumptions about teaching (Cutrim Schmid, 2011), and assists them to develop their pedagogical learning (Christ, Arya, & Chiu, 2014). Importantly, Harlin (2014) found that being able to review their teaching using a video tool led teachers to greater self-awareness and prompted a change in practice from being teacher-directed to a more student-oriented approach. Due to the many reports on the effectiveness of teachers using video to evaluate their teaching, this study employed VBR in the PLCs. Using videos as part of the professional learning of EFL teachers in rural areas of Indonesia could provide teachers with an opportunity to review their practice and obtain critical feedback on their teaching as well as giving it to their colleagues.

While using a combination of teachers' own videos and those of other teachers could lead to improved self-reflection through observing their own teaching and identifying aspects needing improvement (Zhang et al., 2011), there is also the potential problem that teachers might not be as critical of their own teaching as they could be due to their familiarity with their own methods; they might choose to use only selected scenes (Kleinknecht & Schneider, 2013). Teachers who conducted descriptive reflection as well as critical reflection on their own practice, gained new insights when they watched the teaching practices of others. This approach to professional learning meant that they learnt from their colleagues' practice as they made comparisons with their own teaching (Zhang et al., 2011). The use of video reflection in a group contributed to teachers' increased feelings of accountability to act because of the feedback they received during their discussions with others (Tripp & Rich, 2012). These studies suggest that teachers in a PLC need to have opportunities to watch not only their own teaching videos but those of others, because this expands their critical reflection. This was a

contributing factor in the current research which employed teachers' own teaching videos and those of their colleagues for discussion in their PLC.

A comprehensive study conducted in Indonesia by MoEC and the World Bank on the use of video in mathematics teachers' professional development in the setting of teacher working groups, found that teachers valued watching videos as part of their professional learning. The study used clips from teachers' classroom videos to stimulate discussion of their practice, and this helped teachers develop their beliefs and knowledge (Ragatz, 2015; Ragatz, et al., 2015) related to teaching mathematics.

Widjaja and Dolk (2015) investigated video usage and classroom artefacts for Mathematics teachers' professional development and revealed that the affordances of video and classroom artefacts provided insight into teachers' classroom practice related to improving their teaching and learning practices. They used video in their professional learning sessions to encourage critical discussion on the content of lessons and on ways of engaging students in mathematics learning. In addition, teachers were able to access evidence from videos to evaluate students' work samples and their learning and they were able to use this information to prepare their lessons. It was found that the changes in classroom practice made by the teachers encouraged students' active learning (Widjaja & Dolk, 2015) and allowed teachers to focus their reflection on classroom processes and learning activities (Setyaningrahayu, Widhi & Murtisari, 2019). These findings also indicated that video recordings of lessons provided evidence that teachers could use for reflective practice in professional learning.

The use of video is still quite new for EFL teachers' professional learning in Indonesia, although videos have been widely known internationally and used to help teachers learn. However, in the Indonesian context there are barriers to using video in classrooms related to there being limited

electricity supply, inadequate educational resources, and insufficient knowledge of video management (Nova, 2017). Acknowledging that the use of videos was underexplored in professional development for Indonesian teachers, this study employed VBR in EFL teachers' critical reflection in the context of a PLC. This is another original contribution to research focusing on professional development in rural eastern Indonesia.

2.2.8 The role of a code of conduct in PLCs

One of the key elements contributing to the effectiveness of a PLC, as discussed earlier, is ensuring a positive PLC collaboration experience for all teachers. This can be supported by a code of conduct or protocol providing guidance in terms of set or agreed norms and behaviours to be abided by during a PLC. Some examples of norms and behaviours include that participants should respect each other, commit to the collaboration, listen to others, and finish their comments before sharing in the PLC. A longitudinal study conducted in Germany with six mathematics and science teachers concluded that rules were needed to guide the conversation among teachers during the video reflection process (Alles, Seidel, Gröschner, 2019). The study found that rules helped teachers to have positive professional learning experiences and to be mindful of their comments to each other. They were more engaged due to the structure and friendly environment that the rules offered (Alles et al., 2019). In such an environment they were able to give critical feedback to their colleagues because they felt appreciated during their conversation in the PLC. In addition, teachers developed their self-confidence during their reflection and were brave enough to show their teaching videos to others so they could view and comment on their practices (Alles et al., 2019). This highlights the value of a code of conduct for ensuring meaningful discussion in the PLC.

2.2.9 School leadership, school culture and teachers' PLC commitment

"Creating a vibrant and successful learning community is a collaborative venture among all staff in any school. School principals' leadership in the area of teacher professional development is critical to the creation and success of a school learning community" (Bredeson, 2000, p. 388). Studies have shown that schools with strong PLC cultures that encourage shared responsibility, reflective practice, de-privatisation of practice and organisational learning have more positive influences on sustainability of school improvement (Lee & Louis, 2019; Louis & Lee, 2016). It can be seen that leadership in a school plays an important role in sustaining any changes from a PLC (Zheng, Yin, Liu & Ke, 2016). King (2016) found that leadership influenced teachers' overall attitudes towards working in a PLC and had an influence on any subsequent reform (King, 2016).

If principals build positive relationships with teachers and communicate effectively with them, they are laying the foundation for being able to sustain changes in their school (Hollingworth et al., 2018), because teachers are likely to have a greater willingness to take on new initiatives such as a PLC (Yin & Zheng, 2018). This was shown in a study conducted in Korea where supportive and facilitative leadership impacted teachers' emotional reactions to implementing changes in their practice (Park & Jeong, 2013). Leaders who bring transformation into their school are likely to provide a positive environment for teachers to continue practices implemented through a PLC. In the current investigation, an emphasis was placed on gaining support from school principals before any PLC intervention was conducted.

2.3 Higher Order Thinking (HOT)

HOT is an important focus of the present investigation because it facilitates the development of critical and creative thinking which is a requirement of the current Indonesian national curriculum.

2.3.1 HOT in EFL lessons

In 21st century education, students are required to master critical thinking and problem-solving skills (Gustine, 2014; Taft, 2012) to prepare them to solve real life problems and compete globally. Critical thinking refers to a thinking process that encourages a deeper insight into information before making any decision (Bruning, Schraw & Norby, 2010); it is “focused in that we are not just thinking but thinking about something we wish to understand more thoroughly. The purpose of critical thinking is to weigh and evaluate information in a way that enables us to make informed decisions” (Bruning, Schraw, Norby, 2010, p. 179). Critical thinking involves reasoning and investigating evidence and can be developed through explicit instruction about critical thinking (Halpern, 2013; Marin and Halpern, 2011).

Critical thinking is developed through employing HOT activities in EFL instruction. Students involved in activities that encourage discussion, inquiry, inventing concepts, and self-evaluation have been found to develop their critical thinking more than those who are not (Irwanto, Saputro, Rohaeti, & Prodjosantoso, 2018). Irwanto et al. advocated that HOT promotes critical thinking and develops problem solving skill development because it gives students opportunities to analyse, problem solve, evaluate, and reflect as they learn. Further to this, Yang and Gamble (2013) recommended three design principles that they believed should be included in EFL lessons to stimulate students’ development of critical thinking, these being: “the use of sustained content, the provision of a variety of perspectives and sources and the use of issues-based and relevant topics” (p. 408). These features need to be considered when EFL teachers design their lessons if they are to encourage the development of students’ critical thinking. It can be seen as essential to teach EFL students about HOT if they are to develop as critical thinkers.

Teaching HOT can develop critical thinking. HOT refers to cognitive ability categories that require more complex thinking, such as *analysing*,

evaluating and creating as described by Krathwohl (2002) in the revised Bloom's Taxonomy "(*Remembering, Understanding, Applying, Analysing, Evaluating and Creating*)" (Krathwohl, 2002, p. 215). The taxonomy is a useful guide for teachers in developing students' ability to think critically by developing their HOT skills. The focus of this investigation has been on helping EFL teachers integrate HOT to develop students' critical thinking over time. Figure 2.9 shows the position of HOT in the top three aspects of the revised Taxonomy of Cognitive Objectives.

Figure 2.8 Revised Bloom's taxonomy (Krathwohl, 2002, p.215)

Figure has been removed due to copyright restriction

The taxonomy shows the cognitive objectives used in learning as progressing from LOT goals and activities to HOT ones. Remembering is the lowest thinking level and creating is the highest in this taxonomy. The teachers' task in EFL lessons is to provide opportunities for students to develop their thinking from LOT to HOT. However, students cannot develop critical thinking if they are only exposed to LOT activities such as memorising, understanding and applying in their EFL lessons. Therefore,

providing opportunities for students to learn HOT in EFL lessons is important for facilitating their critical thinking in this area. "Higher Order Thinking (HOT) involves the transformation of information and ideas through synthesis, generalization and hypothesis to arrive at some conclusion or interpretation in an attempt to solve a problem, gain understanding or discover new meaning" (Tsourapa, 2018, p. 8). The investigation reported here has focussed on professional learning through a PLC within which EFL teachers worked together to develop their understanding of HOT and how to teach it.

HOT is of interest in the Indonesian context because the Indonesian educational goals policy document describes HOT skills as the main competencies that Indonesian students should have (Kemendikbud, 2016a). Particularly in the EFL context, with English positioned as a global language (Crystal, 2003; Nunan, 2003), students need to master HOT to be able to use the English language to critically assess information. Research in the EFL context of teaching and learning has shown that integrating HOT in reading, writing, listening and speaking classes, results in improvements in students' English proficiency (Mehta & Al-Mahrooqi, 2015; Wang & Liao, 2014; Yang & Gamble, 2013).

Another recent study (Mursyid & Kurniawati, 2019) compared the HOT perception of EFL in Generation X teachers (experienced) and Generation Y (Novice) teachers and found that teachers with more teaching experience had more understanding related to implementing HOT in their teaching than teachers with less teaching experience. This suggests that formal teacher education in Indonesia has not been providing sufficient emphasis on PCK related to HOT despite the expectations outlined recently in teachers' professional standards. Both generations considered HOT skills to be important for students, but only Gen X teachers said they included HOT activities in their teaching. Limited content knowledge, the lack of skills to integrate HOT into their lesson plans and knowledge of classroom activities that could be used, and the predominant employment

of a teacher-centred approach in teaching were identified as the main barriers to implementing HOT (Mursyid & Kurniawati, 2019). The results of that study suggest that having practice in teaching HOT is important if teachers are to gain skills in teaching HOT concepts and implement them successfully in their classrooms. Novice EFL teachers need to be supported to develop their understanding of HOT and how it can be integrated into their teaching practice.

Moreover, students' critical thinking capabilities (Mehta & Al-Mahrooqi, 2015) and academic performance in EFL classes have been found to increase (Yang & Gamble, 2013) when students are given opportunities to analyse text, and evaluate and create products as part of their learning. Yang and Gamble (2013) recommended that activities such as critical reading skills, argumentative writing, peer reviewing, presenting information and discussing it, as well as debating activities, are likely to encourage the development of students' HOT capabilities in EFL classes (Yang & Gamble, 2013). HOT can also be integrated into teaching through problem-based learning, critical thinking activities, and the use of higher level questioning (Peterson & Taylor, 2012). For example, students are asked to provide solutions through small group discussion with some problems such as, environmental problems, and social problems relating to their context. Then, they are encouraged to incorporate the use of the internet, computers and other technologies (Ganapathy, Singh, Kaur & Kit, 2017) to find the best solutions to wicked problems and to use web-based activities (Roy, 2014) to help students develop HOT. The skills can also be developed through using simple strategies such as the six thinking hats technique in discussions within small groups or individual work (de Bono, 1995). This approach to learning is relevant to the demands of the 21st century because real-life connections can be made. Furthermore, developing HOT capabilities could encourage students to question and inquire using different sources of knowledge and in this way develop their capacity for critical

thinking. The development of a capacity for HOT is needed by Indonesian students in order to prepare them for a competitive work life and for education in this era of globalisation where they need to be actively engaged as global citizens and be able to use their English critically (Hamid & Nguyen, 2016) in their interactions with people from different parts of the world.

Although Indonesian teachers are required to teach HOT, research has found that they spend little time implementing it (Chang et al., 2014; Ragatz, Sugiarti, & Iskandar, 2015; Ree, 2016). This is also the case in EFL teaching and learning in the Indonesian context (Sunggingwati & Nguyen, 2013). Moreover, many Indonesian teachers have been providing students with all the information related to topics during their EFL lessons (using a lecturing or exposition style), rather than encouraging students to inquire, find information, analyse, evaluate and produce new products or solutions as a result of their learning (Tsourapa, 2018). Therefore, it has been recommended that EFL teachers in Indonesia should include more HOT activities in their EFL classes (Sunggingwati & Nguyen, 2013). To be able to do this, they need structured and on-going professional learning experiences where they experience how to use and teach HOT (Torff, 2003).

There has been some research in Indonesia to explore the development of HOT skills in EFL textbooks for vocational high schools. A study by Margana and Widyantoro (2017) found that existing EFL textbooks mostly promoted LOT with their emphasis on remembering, understanding, and applying knowledge in the areas of reading, writing, listening, and speaking skills. Overall, the textbooks emphasised activities that encouraged students to memorise words or language structure and focused on LOT in reading skills. The researchers found that there was also a lack of authentic materials used in the textbooks to encourage students' exposure to the English language (Margana & Widyantoro, 2017). The finding that EFL textbooks in Indonesia did not actively

promote HOT raises concern because EFL teachers are mandated to use these prescribed textbooks to guide their teaching. Therefore, their reliance on textbook activities would mean that EFL teachers are indirectly encouraging LOT in their EFL classrooms.

A recent study conducted in East Java by Tyas, Nurkamto and Marmanto (2020) also investigated the role of EFL teachers and textbooks in developing students' HOT skills, and found that even though one EFL teacher had a well-developed understanding of HOT concepts due to having attended professional development sessions related to HOT implementation, she struggled to implement or transfer her knowledge of HOT into her EFL classroom practice. The teacher was not able to teach HOT to students with different English language proficiency, and especially those with low English proficiency levels. A reason for this could be that, in spite of the EFL textbook providing HOT questions for learning activities, the teacher asked LOT questions in her learning activities. It is clear that even though EFL teachers might appear to understand HOT concepts, they need to know how to successfully introduce HOT into their teaching practice so they can design or modify learning activities to promote HOT. EFL teachers who lack good PCK related to teaching HOT, are unlikely to be promoting HOT through their teaching. If they rely on LOT in their teaching, their students will not be learning about thinking critically. Both research studies conducted in western Indonesia that were discussed earlier revealed that the two main challenges for developing HOT in EFL teaching and learning were related to EFL textbooks mostly encouraging LOT, and EFL teachers struggling to translate HOT concepts into their classroom practice.

This is exemplified by a recent study in Flores, ENT, which identified three barriers relating to the implementation of HOT in EFL classrooms (Ginting & Kuswandono, 2020), the first of these being that EFL teachers had limited knowledge about HOT and how to integrate it into their teaching. This has resulted in them lacking competence for designing and teaching

HOT tasks or activities in their lessons. A second barrier was that they have lacked opportunities and time to prepare lessons with a focus on HOT and have considered time spent on HOT as a hindrance to teaching students to pass the national examination. The third barrier was that teachers considered that their students were incapable of learning HOT or doing HOT tasks in their learning. The study found that this belief about EFL students' lack of ability to accomplish HOT, influenced teachers' choice of classroom tasks so that students had limited chances to learn HOT. Although teachers participated in a one-off workshop on HOT, they did not implement what they had learnt (Ginting & Kuswando, 2020) because they did not have enough understanding of HOT to be able to teach it; this underlines the importance of teachers understanding the underlying concept of critical thinking if HOT is to be developed.

EFL teachers' thinking and beliefs are likely to influence their HOT teaching practices (Baleghizadeh & Nasrollahi Shahri, 2014; Mak, 2011). With research suggesting that effective PLCs could lead to teachers changing their beliefs and practices (Owen, 2015), it is clear that it would be valuable to provide opportunities for teachers to learn about HOT in a PLC in a way that encourages them to incorporate it into their EFL teaching practices, which was an important aim of this research. This is important because when students experience HOT in their EFL classes (Margana & Widyanoro, 2017), they are being prepared for life in the twenty-first century.

Another study investigating EFL teachers' beliefs about teaching HOT in reading classes revealed that there was a discrepancy between teachers' beliefs relating to HOT in their lesson planning and in their classroom practice (Kusumastuti, Fauziati, & Marmanto, 2019). Although they listed HOT learning objectives in their lesson plans, they did not implement HOT in classroom activities. Like Tyas et al. (2020), Kusumastuti et al. concluded that Indonesian EFL teachers need to have professional learning focused on developing their understanding of HOT and how to

implement it in their teaching practice (Kusumastuti et al., 2019). Such professional learning would also need to develop teachers' PCK beliefs for teaching HOT.

The limited use of HOT is evident not only in designing and providing learning activities for students but also in assessment design. Utami, Nurkamto, and Marmanto (2019) examined test items used by EFL teachers teaching the senior high school test from 2016–2019 and found the majority of questions required LOT, with their focus on remembering, understanding and applying knowledge. Few test items measured students' analysing skills, such as being able to identify the general structure or purpose of a text. No test items were designed to measure evaluating and creating skills (Utami, Nurkamto, & Marmanto, 2019). Having limited PCK for teaching HOT could be influencing teachers to focus on LOT and possibly on only one aspect of HOT (analysing), as reflected in those test items.

Similarly, a study by Putra and Abdullah (2019) to identify HOT test items in Indonesian EFL national examinations from 2013-2018, revealed that most questions were oriented toward LOT. That study indicated there was a lack of HOT oriented questions in the Indonesian EFL national examination up to 2018, pointing to a misalignment between assessment and the new 2013 curriculum with its emphasis on developing students' critical and creative thinking through promoting the teaching and learning of HOT in EFL classrooms. Curriculum and assessment need to be aligned if the teaching and learning of HOT in EFL classrooms is to be promoted in Indonesia. Without this change, any efforts to integrate HOT into EFL teaching and learning are not likely to be effective.

2.4 Pedagogical content knowledge (PCK)

This section provides a definition of PCK and argues for its importance. Then there is a review of key studies about PCK in EFL education, which is followed by a discussion of the sources of PCK. Subsequently the relationship among PCK components and between PCK and quality teaching and learning is explored. Next, a few examples are offered to show how PCK relates to teaching practice and improvements in students' learning. There is a description of studies using PCK interventions and of the gaps in the literature on PCK. There is also an explanation of what constitutes EFL teachers' PCK and how a PLC can be a source of PCK development.

2.4.1 Definitions and components of teachers' PCK for teaching EFL

2.4.1.1 Definitions of teachers' PCK

In 1987, Shulman distinguished seven categories of teachers' knowledge, including PCK, which he described as being a "special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" (1987, p. 8). Teachers' PCK is their professional knowledge that enables them to transform subject matter knowledge or content knowledge into teaching practice or instruction that is mindful of students' ways of learning and also considers their context, curriculum and culture (Gudmundsdottir & Shulman, 1987). Teachers require PCK to make a lesson 'teachable' (Gudmundsdottir & Shulman, 1987, p. 60). Shulman's original definition of PCK did not include the affective side of teachers' context and culture and their situated perspective on teaching. This brought other researchers to elaborate on the definition of PCK (e.g., Chan & Yung, 2018; Gess-Newsome et al., 2019; Kind & Chan, 2019; Mu, Liang, Lu, & Huang, 2018). PCK draws on different types of teachers' knowledge to produce high-quality teaching and teachers' growth over time, by using their teaching experience and providing opportunities for professional learning (Berry, Loughran, & van

Driel, 2008; Driel & Berry, 2012; Magnusson et al., 1999; Mulholland & Wallace, 2005; Van Driel & Berry, 2010). The central idea of PCK in the present investigation is that teachers' professional wisdom enables them to integrate various aspects of their knowledge base to plan and teach lessons effectively.

The notion of PCK is significant in teacher education and teaching practice and has attracted much interest. For example, Grossman and Richert (1988) stated that PCK includes "conceptions of subject matter for teaching, knowledge of student understanding, knowledge of content to be taught, and knowledge of curriculum materials" (p.56). Ball, Thames, and Phelps (2008) divided "PCK into knowledge of content and students (KCS), knowledge of content and teaching (KCT) and knowledge of content and curriculum" (p.403). Segall (2004) emphasised that PCK is more than just transforming subject matter knowledge using the best pedagogy to produce instruction in the classroom, and stressed that teachers have to examine, or reflect on, their pedagogical practices and the degree to which their practices work.

PCK has been recognised as professional wisdom or professional knowledge. Many researchers have added to what they considered to be a lack of definition and explanation of aspects that constitute or contribute to the development of teachers' PCK. Studies on PCK can be divided into two perspectives, transformative and integrative (Gess-Newsome et al., 2019; Neumann et al., 2019). Some researchers have investigated PCK as a way of transforming content and pedagogy into teachable lessons (Grossman, 1990) and others have looked at it as the process of integrating or embracing different teachers' knowledge bases that contribute to them developing PCK through their teaching practice (Gess-Newsome et al., 2019; Park & Chen, 2012). Importantly, previous studies have taken into consideration the context and culture of each school as an influence on the development of teachers' PCK (Hashweh, 2005; Magnusson et al., 1999; Mulholland & Wallace, 2005; Wongsopawiro et

al., 2017). Each school has its own culture and context that shapes teachers' professional learning experience that contributes to their PCK and teaching practice positively or negatively. This school culture influences how teachers have opportunities to continue developing their professionalism within the school.

2.4.1.2 PCK components for teaching EFL

This section provides a review of research studies related to different PCK components and defines the five internal PCK components for EFL teachers.

The original PCK categories were defined mostly in relation to the fields of science and mathematics. In the field of TESOL teacher education, Freeman and Johnson (1998) introduced the knowledge base for TESOL teachers that consists of three aspects relevant to this investigation. First, teachers are learners who continue to develop through professional learning. Secondly, the social context of a school and the schooling process influence teachers' professional learning and their knowledge about teaching. Thirdly, their pedagogy is influenced by their beliefs and instructional knowledge. Language teachers, such as those teaching EFL, can develop understanding of their own teaching through reflective practice, collaboration and continuing professional learning in the context of their teaching (Freeman & Johnson, 1998). This concept is aligned with the concept of PCK as proposed by Shulman (1987, 2015), and shows that having professional knowledge distinguishes teachers from non-teachers and supports the provision of effective teaching. This highlights the essence of PCK in TESOL teaching in general and in EFL teaching in particular.

In this investigation, PCK is described as the way in which teachers integrate or embrace different types of teacher knowledge for designing EFL lessons that include HOTS to stimulate students' ability to think critically. Growth in teachers' PCK connects to growth in different

knowledge categories which contribute to overall PCK development that is likely to impact on the quality of teaching and students' learning (Appleton, 2003). As teachers plan lessons, they draw on PCK categories that are related to the subject in the context where they are teaching. PCK is influenced by teachers' professional experience and their beliefs, and it can be nurtured within PLCs that allow teachers to practise new ways of teaching in their school context and assist them to reflect on their own teaching (Van Driel & Berry, 2010).

EFL teachers' knowledge base has been described as having eight components including knowledge of: "language and related disciplines; English language teaching or EFL theories, skills, and techniques; context and social relations; class, time and learning management; research and professional development; practicum; teachers and their assessment; reflective and critical teaching" (Moradkhani et al., 2013, pp. 131-133).

EFL teachers' PCK comprises various knowledge bases for teaching to produce effective EFL instruction in classrooms. A study by Hu (2013) investigating EFL teachers' PCK in teaching reading revealed that EFL teachers have PCK components such as knowledge of: goals of teaching EFL reading, EFL reading curricula, students' learning about EFL reading, strategies for teaching EFL reading, and assessment of students' learning of EFL reading. EFL knowledge of reading curricula was divided into knowledge of: teaching content, organisation of teaching EFL reading, and selection of reading texts (Hu, 2013). Knowledge of EFL teaching strategies consists of knowledge of a selection of teaching activities and instructional language. As described by Hu (2013), knowledge of assessment of students' learning covers knowledge of assessment dimensions and knowledge of assessment methods. Teachers developed their PCK by combining classroom teaching experience, learning experience, and collaborating (Hu, 2013). However, teaching experience is the best source for developing EFL teachers' PCK to teach reading skills (Hu, 2013).

Another study investigated EFL teachers' CK and PCK and suggested that EFL teachers' "knowledge of the principles of language teaching methodology, linguistics and language proficiency" were important aspects of their content knowledge (Sadegh, Gholamreza, & Parivz, 2017, p.499). It also revealed that PCK consists of components that include "knowledge of teaching and assessing EFL based on the required curriculum; knowledge of developing, planning and managing EFL teaching; and knowledge of developing and evaluating EFL teaching materials" (Sadegh, Gholamreza, & Parivz, 2017, p.511). PCK consists of different teacher knowledge components that interact to influence the quality of EFL teaching.

Those studies focused on PCK in EFL and highlighted the common features of PCK in EFL as being EFL content knowledge, EFL general pedagogical knowledge covering knowledge of EFL instructional models and strategies, and knowledge of classroom management and assessment (Moradkhani et al., 2013; Sadegh, Gholamreza, & Parivz, 2017; Hu, 2013). Hu (2017) and Sadegh et al. (2017) extended PCK components to include knowledge of EFL curriculum and of students' learning styles. Moradkhani et al. then added the component of knowledge of context and social dimensions (Moradkhani et al., 2013). All of these PCK knowledge components were of interest to this investigation.

A recent study conducted in Indonesia by Faisal (2015) aimed to identify EFL teachers' PCK components required by the MONE regulation and Policy Number 17/2007 to teach writing in junior high schools. It was suggested that professional EFL teachers in Indonesia must master "four competencies, pedagogical, professional, personal, and social" (Faisal, 2105, p.103). Their PCK needs to include specific knowledge of curriculum, subject matter, learners, and pedagogy (Faisal, 2105), indicating that PCK is crucial knowledge that every Indonesian EFL teacher should have. As shown in all these studies, the different

components of EFL teachers' PCK influence their overall PCK and the quality of their instruction.

2.4.1.2.1 EFL content knowledge (EFL CK)

EFL CK or subject matter knowledge refers to knowledge of English proficiency and other aspects of EFL (Moradkhani et al., 2013). EFL teachers in Indonesia are required to possess knowledge of subject matter which refers to teachers' knowledge of the English language that they can share with their students in the classroom. This knowledge also covers various knowledge of different text genres in the EFL field (Irvine-Niakaris & Kiely, 2015), such as knowledge of grammar and vocabularies (Sadegh et al., 2017) which teachers in Indonesia must use to teach genre-based lessons for speaking, listening, reading, and writing. This shows that EFL teachers in Indonesia need to have knowledge related to various text genres, such as recount, narrative, report, descriptive, and exposition to teach EFL content effectively in their classrooms (Faisal, 2015).

A study in Aceh, Indonesia, found that Indonesian EFL teachers' PCK, related to subject matter knowledge and knowledge of teaching strategies, varied and influenced the teaching methods they employed in their classrooms (Ibrahim, 2016). Ibrahim also found that they had limited PCK related to knowledge of their learners' understanding of the concepts being studied. Although these teachers had taught EFL for more than six years, they still struggled to prepare lessons that would help students clarify their misconceptions related to the content of the lesson. Ibrahim concluded that this could be due to lack of knowledge about how to address students' misconceptions.

2.4.1.2.2 EFL general pedagogical knowledge (EFL GenPK)

EFL GenPK refers to knowledge that helps teachers to teach lessons successfully in the classroom (Gess-Newsome et al., 2019). As described by Gess and Newsome et al., PCK-Pedagogical Knowledge (PK) is "a

rationale linking teaching strategies to student learning; strategies for eliciting student prior understandings; and strategies to promote student examination of their own thinking” (p. 950).

EFL teachers must have knowledge of instructional models and strategies for teaching EFL topics which include knowledge of: teaching language skills and components and awareness of technicalities; different types of research and EFL resources and practical solutions; classroom management and organisation; classroom communication and discourse (Moradkhani et al., 2013). Having GenPK knowledge assists EFL teachers to communicate the content of their lessons effectively during teaching. In Indonesia, EFL teachers are expected to have this knowledge to share the content of the lesson using appropriate strategies, organising lessons, managing the classroom and assessing students’ learning effectively. This knowledge is described as required pedagogy and professional competencies for EFL teachers in Indonesia. Faisal (2015) cautioned that without this knowledge classroom learning would not achieve designated learning goals.

2.4.1.2.3 EFL curriculum knowledge (EFL CurrK)

EFL curriculum knowledge is described in the pedagogy and professional competencies that Indonesian EFL teachers should possess. It helps them to develop their lesson planning based on the prescribed ELT 2013 Curriculum objectives, select their teaching materials, and understand the competencies standard that students must achieve in their learning. This knowledge requires teachers to understand the scientific approach that underpins the curriculum, which refers to “eight activities a scientist does, namely observing, questioning, experimenting, data or information processing, presenting, analyzing, associating, summarizing, and creating” (Faisal, 2015, p. 106). Faisal’s description shows that the Indonesian EFL Curriculum 2013 requires teachers to help students develop their critical thinking through their learning. One way to help students develop their critical thinking is to teach them HOT skills in EFL

classrooms. For EFL teachers to be able to do this, they must understand the concept of critical thinking and know how to include HOT in their lessons.

2.4.1.2.4 Knowledge of learners and their characteristics (KLLC)

EFL teachers in Indonesia must understand their learners well to support them to learn effectively (Peraturan Pemerintah, 2008). This knowledge is listed as pre-requisite knowledge in teachers' required pedagogy and social competencies (Faisal, 2015). It encourages EFL teachers to consider different dimensions related to their students and include those aspects in their planning and teaching of lessons. It also encourages a student-centred approach as prescribed by the ELT Curriculum 2013. Teachers' knowledge of their learners and their characteristics encourages teachers to be inclusive in their planning of learning activities, and to be mindful of students' different abilities so they can facilitate learning for all students, even those who have learning difficulties (Faisal, 2015).

2.4.1.2.5 Knowledge of educational contexts and cultures (KECC)

KECC refers to the importance of teachers having pedagogical culture and context knowledge. This refers to

language, religion, and identity as features of the lived settings in which teaching, learning, and development occur... the big idea within PCK was that all teaching must be mindfully situated in the disciplinary, cultural, personal, and social settings in which it occurs. PCK is about the importance of situating teaching in all those 'cultures' in the sense of 'culture' that we use in science, as a medium within which things grow (or die). (Shulman, 2015, p. 10)

In Indonesia, this knowledge is part of teachers' social and professional competencies that are required by government regulations (Peraturan Pemerintah, 2008). Teachers must understand the underlying cultures of their workplace and the community where their teaching is situated so

they are able to adjust their teaching to the context and culture of the community in which they are working.

2.4.2 Teachers' beliefs and their PCK

Unlike Shulman and associates, PCK was perceived by Morine-Dersheimer and Kent (1999) to have connections not only to teachers' various knowledge-based categories, but also to teachers' beliefs. Aligned with this view, Hashweh (2005) proposed that PCK should be recognised as a collection of teacher pedagogy constructions (TPCs) which have developed through years of teaching practice and are influenced by teachers' knowledge and beliefs (Hashweh, 2005). Although Gudmundsdottir and Shulman (1987) argued that PCK is "built with and builds upon" (p. 60) different teacher knowledge categories in order to produce high quality teaching practices, they did not include the non-cognitive sides of teaching in the original definition of PCK. Later, after many years of research on PCK, Shulman (2015) acknowledged that the affective or non-cognitive side of teaching is important for development of teachers' PCK.

The affective side of PCK includes teachers' development of their identity and beliefs throughout their teaching, action in practice (reflection), the culture and context of their teaching, the measured outcomes of teaching and learning, and students' ways of thinking (Shulman, 2015). Shulman's recent work shows the importance of teachers drawing connections between their professional practice knowledge and their beliefs, reflecting on practices, cultures, and the contexts of their teaching. PCK does not stand alone as a purely intellectual process because it involves these affective and non-cognitive aspects as teachers develop teaching and learning outcomes in the context and culture of the local community in which they and their students live (Shulman, 2015). Thus, PCK involves teachers' actions in their practice as well as their reflection upon their actions (Shulman, 2015). As Shulman described it, PCK consists of components of teachers' knowledge base including: "(a) content

knowledge, (b) general pedagogical knowledge, (c) curriculum knowledge, (d) knowledge of learners and their characteristics, (d) knowledge of educational contexts, (e) knowledge of educational ends, purposes and values and their philosophical and historical grounds” (Shulman, 1987, p.8). Later he added “(a) pedagogical action in practice (reflection) knowledge, (b) knowledge of measured educational (learning and teaching) outcomes, (c) pedagogical culture knowledge and pedagogical context knowledge, and (d) knowledge of teachers’ development of identity and beliefs (affective and moral sides of teaching)” (Shulman, 2015, pp. 9-10).

PCK can be summarised as teachers’ knowledge of how to integrate different types of knowledge to provide effective teaching and learning in the classroom. It cannot be limited to one or two types of knowledge and depends on the teaching context.

2.4.3 The QTF and PCK

The QTF provides a knowledge-based approach (Gore, et al, 2017; Shulman, 1987; 2015) to planning an intervention in which teachers are able to examine their teaching practice and carry out teaching observations and evaluations of their teaching. Gore et al. (2017) explained that:

QTF provides a structure for thinking about the practice of teaching that organises many discrete skills and practices into three key ideas as – the dimensions of Intellectual Quality, Quality Learning Environment, and Significance – elaborated through the 18 elements of the model. In so doing, it reduces the multiplicity of teaching's demands without denying its complexity. The dimensions are comprehensive in focus, addressing the intellectual demands of the work, the learning support provided by and expectations of teachers, and ways of connecting school learning to broader issues in students' lives. (p.109)

In other words, the dimensions of the QTF cover the PCK elements that this study sought to identify. Table 2.1 maps the relationship between the PCK components for teaching EFL in Indonesia and the QTF elements.

Table 2.1 The relationship between EFL teachers’ PCK components and QTF elements

EFL teachers’ PCK components based on literature	QTF elements
EFL content knowledge	Deep knowledge, Metalanguage
EFL general pedagogical knowledge: <ul style="list-style-type: none"> • Knowledge of EFL instructional models and strategies • Knowledge of EFL classroom management and organisation • Knowledge of EFL classroom communication and discourse • Knowledge of EFL student assessment 	Higher order thinking, Student direction, Connectedness Engagement, Social support, Students’ self-regulation, Inclusivity Substantive communication, High expectation, Narrative Explicit quality criteria
EFL curriculum knowledge	Knowledge integration
Knowledge of EFL learners and their characteristics: <ul style="list-style-type: none"> • Knowledge of students’ understanding of EFL topics 	Problematic knowledge, Background knowledge, Deep understanding
EFL knowledge of learners’ educational context and cultures	Cultural knowledge

The linking of the QTF elements to facilitate the investigation of the five PCK components is an original contribution of this investigation to the field of studying EFL teachers’ PCK.

Teachers need to have good PCK for effective teaching. When teachers have limited PCK, students’ learning is compromised because teachers are not able to transform their content knowledge into a comprehensible lesson, with the result that students’ learning suffers (Triastuti, 2014). It also means that if teachers have limited PCK they are not able to clarify students’ misconceptions (Ibrahim, 2016) or manage the classroom well, both of which hinder the learning process (Rido, Nambiar, & Ibrahim,

2016). It can be seen that teachers' PCK has an important influence on their teaching practice.

2.4.4 Sources of PCK

Teachers' PCK can be developed through pre-service teacher education, teaching practice, in-service teacher professional learning, teacher collaboration and teachers' reflective practice. This section provides an overview of studies conducted to develop teachers' PCK in order to understand different sources of PCK and to explain why a PLC was chosen in this investigation of EFL teachers' professional learning.

2.3.5.1 Teacher pre-service education

Teachers begin to develop their PCK in their pre-service education program. A study into pre-service English as a Second Language (ESL) teachers' professional knowledge in Germany found that content knowledge (CK) and general pedagogical knowledge (GPK) contributed to PCK (König et al., 2016). The study found that pre-service teachers' PCK was more significantly connected to their GPK than to CK (König et al., 2016), indicating that quality pre-service education is a pre-requisite for developing teachers' PCK (König et al., 2016). Another study to explore pre-service EFL teachers' PCK within their curriculum revealed that, for teachers to effectively develop their PCK, the curriculum in pre-service teacher education had to focus on EFL proficiency, EFL pedagogical knowledge, knowledge of the educational context and culture, and knowledge of research skills for informed classroom practice (Al-Jaro, Asmawi, & Hasim, 2017). That finding is relevant to this discussion because the quality of teachers' pre-service education contributes to their initial PCK development, and without this initial education in EFL teaching, teachers cannot go on to develop their PCK effectively.

2.3.5.2 Teaching practice

Teaching practice has been found to contribute to the development of teachers' PCK. Having many years of teaching experience helps teachers

to understand misconceptions that students are likely to have when they learn about certain topics. For instance, a study by Evens, Tielemans, Elen and Depaepe (2019) showed that in-service teachers had superior knowledge related to practical teaching skills to that of pre-service teachers. In-service teachers understood how to help students who had misconceptions because they knew ways to develop students' understanding of lessons. However, pre-service teachers were found to have more PCK knowledge related to conceptual knowledge than in-service teachers, which could be due to the recency of their learning about teaching in comparison to in-service teachers. Although in-service teachers have a high level of classroom teaching knowledge, they need on-going professional learning to update their conceptual knowledge for teaching languages (Evens et al., 2019). A number of studies have suggested that years of teaching experience (Mulholland & Wallace, 2005; Van Driel & Berry, 2010) and the types of activities used to encourage teachers' active participation in a PLC contribute to the development of their PCK (Mu, Liang, Lu, & Huang, 2018). The current investigation acknowledged the role of practice in developing teachers' PCK and thus provided opportunities for teachers in their own classrooms to implement their new knowledge gained from a PLC intervention.

2.3.5.3 Collaborative and reflective professional learning for teachers

While studies have shown that in-service professional learning is needed for teachers to develop their PCK (Evens et al., 2019; Mu et al., 2018), such learning should include collaboration and reflective practice if it is to contribute to teachers' development of this knowledge. Having the opportunity to plan and evaluate their teaching with colleagues, helps teachers ensure they provide effective teaching. This was shown by a comprehensive intervention study on teachers' PCK for scientific argumentation in which teachers participated in nine professional development workshops for two months (43.5 hours) (McNeill and Knight, 2013). The workshops provided opportunities for teachers to analyse

lesson video recordings; analyse students' writing; design an initial learning task; share students' work; and reflect on the process of teaching scientific argumentation in their classes. The study gathered data from pre-and post-surveys, workshop videos, teaching artefacts and students' writing samples. An improvement was found in teachers' PCK related to teaching scientific argumentation structures in students' writing. However, the teachers did not develop their PCK in relation to engaging in argumentation dialogues with students in classroom discussions due to the difficulties they encountered in designing argumentation questions. The researchers concluded that teachers did not get in-depth support to help them develop dialogue argumentation (McNeill & Knight, 2013) so they placed more emphasis on the way students structured their argumentative writing, with the result that they were successful in improving their PCK related to teaching argumentative structure in aspects of writing, but were not successful in developing argumentative reasoning in classroom discussions. Moreover, it was recommended that the study could be improved by giving teachers opportunities to reflect on their PCK for developing dialogue argumentation in their teaching practice, and it was suggested that teachers could use videos of their teaching to focus discussion on this aspect and help them consider how they could improve students' scientific reasoning through their classroom teaching (McNeill & Knight, 2013). Reflection on their teaching was recommended as a way of helping these teachers develop their PCK in a specific area of their teaching (Borko et al., 2010; Garet et al., 2001; Putnam & Borko, 1997, 2000), and the study also recommended that the teachers should have structured guidance so they would be able to notice aspects of their teaching practice (McNeill & Knight, 2013).

Another study conducted on the development of PCK in twelve mathematics teachers used audio recordings of lesson study meetings and individual interviews with teachers. This approach allowed teachers to

develop their PCK by tracking changes in their knowledge of content and students (KCS) and knowledge of content and teaching (KCT) (Ball et al., 2008) as they planned and reflected on their lesson study cycle (Ni Shuilleabhain, 2016). When this was done, there was more participation by teachers and their teaching practice improved. This active involvement helped improve teachers' PCK. As other researchers found, reflective practice contributed to the development of teachers' PCK (Borko et al., 2010; Garet et al., 2001; Putnam & Borko, 1997, 2000).

A more recent study in China investigated teachers' PCK and their knowledge of students in the context of EFL. It reported that years of teaching experience alone did not significantly correlate with teachers' higher PCK, explaining that the teaching context had a "lack of a conducive language environment, limited teaching resources, large class numbers and insufficient curriculum time" to practice (Chen & Goh, 2014, p. 91) which influenced their PCK. On the other hand, the study reported that teachers' familiarity with teaching methods led to higher PCK (Chen & Goh, 2014), and that their participation in active and reflective teaching and learning practices contributed significantly to growth of their PCK knowledge as they tried to improve their own learning and that of their students (Chen & Goh, 2014). In this case, the growth of teachers' PCK resulted from having opportunities to reflect on their teaching practices. In line with this finding, it has been reported that reflection on HOT during interventions to develop PCK were effective in improving teachers' PCK (Evens, Elen, & Depaepe, 2015), indicating the value of providing teachers with reflection time as part of professional learning.

An Indonesian study has identified the different pathways of PCK development in the professional development of science teachers (Wongsopawiro et al., 2017). The study investigated various pathways to change teachers' PCK related to their knowledge of the science curriculum, knowledge of instructional strategies, knowledge of students' understanding of science and knowledge of assessment of students'

scientific literacy. Although the teachers did not show any changes in their PCK related to their knowledge of the science curriculum, the research showed that changes in teachers' PCK were related to opportunities to reflect on their teaching outcomes. Moreover, a structure for reflection was found to be important for teachers' PCK growth (Wongsopawiro et al., 2017). Wongsopawiro et al. (2017) found that a facilitator contributed significantly to improvements in teachers' PCK when teachers were involved in reflection on the process involved. In this research, teachers had time to reflect on their teaching strategy using video recordings of their lessons (Wongsopawiro et al., 2017). Changes in their knowledge varied depending on the context of their school and other personal factors, indicating the complexity of PCK development within the professional learning process (Wongsopawiro et al., 2017).

A study by Mu et al. (2018) that is relevant to this current investigation revealed that teachers who worked in disadvantaged areas had lower PCK in comparison to those who worked in advantaged areas. This was attributed to having limited access to professional development programs, which impacted on the support they received to improve the level of their PCK. The study found that it is crucial to provide PLCs that encourage teachers' learning situated in their classroom practice if their PCK is to be developed. This approach would also narrow educational inequality between schools in advantaged and disadvantaged areas. In the current investigation, PLCs were used to encourage teachers to collaborate to design lesson plans with a focus on HOTS and to reflect on their practice. This is in line with the finding that Indonesian teachers' PCK grows when teachers can enact teaching practices and then reflect on them and the work done by students (Wongsopawiro et al., 2017).

All of these research studies have revealed that teachers need to have professional learning to continue developing their PCK and that this should include collaboration and reflection on their teaching. Teachers' collaboration helps them plan and design activities for their lessons and

allows them to receive feedback that they can use to improve their teaching quality. For this reason, in this investigation a PLC was the setting for teachers' professional learning which aimed to encourage development of their PCK.

2.4.5 The connection of teachers' beliefs and attitudes to their practice

Teachers' beliefs have been defined by various researchers as not able to be separated from their knowledge and practice, but they are important because they connect, influence and contribute to decisions teachers make in their classrooms (Pajares, 1992). Teachers' beliefs are personal and are an integral part of their professionalism, affecting their pedagogical choices as Borg (2001) explained:

A belief is a proposition which may be consciously or unconsciously held, is evaluative in that it is accepted as true by the individual and is therefore imbued with emotive commitment; further, it serves as a guide to thought and behaviour. Beliefs play an important role in many aspects of teaching, as well as in life. They are involved in helping individuals make sense of the world, influencing how new information is perceived, and whether it is accepted or rejected. Beliefs colour memories with their evaluation and judgement and serve to frame our understanding of events. (pp. 186-187)

Teachers' beliefs about learning and teaching have been found to impact not only on their teaching practices, but also their participation in professional learning activities (de Vries, van de Grift, & Jansen, 2014). A study in Indonesia (Widiastuti, Mukminatien, Prayogo, & Irawati, 2020) found a discrepancy between EFL teachers' beliefs and their teaching practice in classrooms, indicating that they did not necessarily put their beliefs about formative assessment into practice. It was suggested that this discrepancy may be influenced not only by the quality of continuing professional development (CPD) and teachers' engagement in this, but also teachers' motivation to continue implementing learning from the CPD in their classrooms (Widiastuti et al., 2020). Another study in the Netherlands suggested that teachers who had higher student-oriented

beliefs or higher combined student-oriented and subject matter-oriented beliefs, engaged more in continuing professional development activities such as collaboration while, in contrast, teachers who had subject matter-oriented beliefs engaged less in reflection and collaborative activity (de Vries et al., 2014).

Primary school EFL teachers' in Indonesia have been found to believe that it is not necessary to teach English to their students (Hawanti, 2014), with the result that these teachers have tended to follow textbook materials and activities and not adjust them to their students' needs and interests. This situation has compromised the quality of students' EFL lessons (Hawanti, 2014), and exemplifies the condition of EFL teaching and learning in many classrooms in Indonesia. Unsurprisingly, students graduating from primary schools have very low levels of English proficiency, impacting on their ability to learn EFL at the Junior High School level (Lie, 2007). This adds to the pressure on EFL teachers in Junior High Schools who must teach students all the basic competencies required to enable them to understand the content or topics required in Junior High School.

A TALIS (OECD, 2009) report suggested there are two types of teachers' beliefs on the nature of teaching and learning.

The direct transmission view of student learning implies that a teacher's role is to communicate knowledge in a clear and structured way, to explain correct solutions, to give students clear and resolvable problems, and to ensure calm and concentration in the classroom. In contrast, a constructivist view focuses on students not as passive recipients but as active participants in the process of acquiring knowledge. (OECD, 2009, p. 92)

Differences between these two types of teachers' beliefs about teaching were identified using the characteristics outlined in Table 2.3.

Table 2.2 Differences between two types of teachers' belief on teaching (OECD, 2009, p. 93)

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Holding direct transmission beliefs and/or constructivist beliefs about teaching influences teachers' practice in their classrooms. As shown in Table 2.3, teachers with direct transmission beliefs tend to have a traditional approach to teaching and learning and employ teacher-centred approaches in their practice, while teachers with constructivist beliefs tend to have a student-centred approach. Unsurprisingly, teachers who employ teacher-centred approaches emphasise lower order thinking (LOT) activities and rote learning, while teachers who employ student-centred approaches emphasise 21st century learning skills such as HOT, critical thinking, problem solving, creativity and collaboration. Teachers' beliefs also impact on the way they discipline their students and the expectations they hold for students' behaviour in the classroom. Teachers with direct transmission beliefs expect students to be quiet during lessons so they

can listen to their explanations and responses to students' questions (OECD, 2009).

The OECD report indicated that teachers who participated in networking and mentoring types of professional development and had regular meetings where they had positive support, developed beliefs about teaching that were more constructivist (OECD, 2009). Teachers who participated in a PLC were found to open their practice to collaboration, showing that changes could occur in school culture in conjunction with changes in teachers' beliefs and practices related to valuing collaboration and reflection (Tam, 2015b). For example, Tam (2015a) found that younger Chinese teachers perceived that PLCs contributed to their professional learning about their work as teachers. Their beliefs helped change their work culture from being individual-task focused to collaborative-task focused. This change reduced teachers' personal isolation in the profession and encouraged collective self-efficacy due to teachers being able to discuss and find solutions to their teaching problems together. Their beliefs also encouraged the development of a culture of support and collaboration in the school community (Tam, 2015a).

However, some teachers in Tam's study opposed using a PLC for professional learning because they believed that this approach could reveal their limitations and they would be vulnerable to negative scrutiny by their colleagues. They were concerned that they would need to adjust their schedule to include classroom visits and that this would impede their normal way of operating in the school (Tam, 2015a). These kinds of concerns and assumptions are normal in relation to teachers' collaborating in a PLC because the process requires teachers to open their classroom for other teachers to observe and to provide feedback on the teaching practice. Overall, teachers' beliefs impact on their ability to be agents for long term change in their educational system (Biesta, Priestley, & Robinson, 2015). This investigation has acknowledged the influence of

teachers' beliefs and attitudes on their teaching and learning practice and has focused on allowing teachers to collaboratively design and reflect on their lessons and those of their colleagues.

2.4.6 The relationship between PCK, quality of teaching and students' learning

Teachers' PCK affects the quality of their teaching practices because teachers draw from their various knowledge bases to teach effectively. Consequently, PCK determines or differentiates high-quality teaching practices from low-quality teaching practices and can differentiate between expert and novice teachers in their knowledge of how to conduct their classes (Gudmundsdottir & Shulman, 1987). Teachers with well-developed PCK are able to consider a topic and how it relates to the bigger picture of the curriculum, select appropriate methods of teaching, and consider students' context, background knowledge and cultural knowledge when they design and teach lessons (Gudmundsdottir & Shulman, 1987). This is in line with the proposition that "PCK helps us to recognise that the knowledge needed for teaching science is different from the knowledge needed to teach literature" (Abell, 2008, p. 1414). Thus, having good PCK for teaching EFL is required to achieve effective teaching and learning. Figure 2.8 shows the connection between PCK, quality of teaching practice and the quality of students' learning outcomes. These relationships have underpinned the present investigation.

Figure 2.9 Relationship between quality of teaching practice and quality of students' learning



Research in science education has explored in detail the topic of PCK, yet little is known about how teachers construct their PCK in the EFL field. For this reason, this investigation employed the QTF to develop teachers' PCK within PLCs to allow teachers to draw on their different knowledge categories as they planned, taught and reflected on their EFL teaching.

The next section discusses the use of a PLC to contribute to the development of teachers' professional agency within reform efforts.

2.5 Teachers' professional agency

Teachers' agency is related to their actions being "informed by past experience (personal and professional histories), oriented towards the future (short term and long-term perspectives) and enacted in the present (influenced by cultural, material and structural resources)" (Biesta et al., 2015, p. 627). It "is practiced when professional subjects and/or communities exert influence, make choices and take stances in ways that affect their work and their professional identities" and "it is influenced by socio cultural conditions of workplace and professional subjects" (Eteläpelto, 2017, p. 187). Agency can be viewed as a transformational process that impacts actively on one's life and work and that results from social interaction in the workplace. Importantly, agency can be developed through workplace learning opportunities that

encourage collaboration and reflection on one's work (Eteläpelto, 2017), as is done in the setting of a PLC.

Any PLC intervention with the aim of encouraging teachers' professional agency is likely to have a positive impact on their professionalism, as has been shown by a study comparing teachers' agency in Australia and China. The study found that school culture and structure impacted on shaping teachers' agency (Simpson, Sang, Wood, Wang, & Ye, 2018). For this reason, educational leaders need to provide support for teachers to develop agency in their teaching (Simpson et al., 2018).

When teachers have agency and are change agents, they are lifelong learners who continue to learn and reflect on their practice so they can improve their teaching knowledge and quality; they have mastery that enables them to become skilful in teaching in order to guide their students, meaning that they are approachable and encourage students to succeed in the classroom; they are entrepreneurs who boldly take risks to make innovations in schools and have a high sense of responsibility in their teaching; and finally they are agents of change who are involved in collaboration with their colleagues in order to improve the quality of teaching and learning in their schools (van der Heijden, Geldens, Beijaard, & Popeijus, 2015).

Developing teachers' professional agency was a focus in this research where teachers would be involved in a PLC with the aim of developing their agency through reflecting on their teaching. The innovation of using VBR was employed to this end. Agency allows teachers to be involved in meaningful collaboration with their PLC colleagues with a view to enhancing their EFL teaching to promote students' ability to think critically using HOT. Teachers' professional agency is closely connected with sustainability of any intervention to promote professional learning, because teachers who have an active role as an agent of change can sustain changes from school professional development programs or school

reforms more easily than those who are passive (Imants & Van der Wal, 2020).

2.6 Sustainability of educational initiatives

The issue of sustainability of school reform programs is important for education quality improvement. Sustainability is the “extent an evidence-based intervention can deliver its intended benefits over an extended period of time after external support from the donor agency is terminated” (Rabin, Brownson, Haire-Joshu, Kreuter, & Weaver, as cited in Chambers, Glasgow, & Stange, 2013, p. 2). Hubers (2020) described sustainability thus:

Sustainability of second-order change as: 1) substantial changes made that affect the core of educators’ everyday practice; 2) a longitudinal process that begins when educators contemplate making changes and ends when satisfactory achievement on the other characteristics is reached and overt learning efforts are stopped; 3) a process of individual and organizational learning as well as changes in behaviors; resulting in 4) significant positive effects on student outcomes. (p. 3)

Sustainability is achieved if “the program components developed and implemented in earlier stages are (or are not) maintained after the initial funding or other impetus is removed” (Scheirer, 2005, p. 322). In this investigation, sustainability refers to long-term changes that teachers have in their PCK and teaching of HOT after the termination of the PLC program. There are several factors that influence the sustainability of educational initiatives. A recent study in Chile, South America (Bellei, Morawietz, Valenzuela, & Vanni, 2020) into school effectiveness and sustainability factors following 10 years of an education initiative, revealed that contextual factors influencing the sustainability of school improvement initiatives were related to local context, educational policies, educational system changes, financial management, human resources, and pedagogy and management. This indicates that schools must adjust or adapt to the contextual changes that occur in their social environment.

Another factor contributing to the sustainability of effective school improvement is the institutional dimension which involves school principals providing strong leadership by making decisions in response to changes in educational policy. To do this they need to have clear vision and support teachers' efforts to improve students' achievement. If a school leadership establishes a trusting, respectful, and safe climate it can encourage a collaborative culture among teachers in which their successes are recognised. However, weak leadership and lack of collaborative work among teachers in schools is likely to result in teachers not maintaining their professionalism and teaching quality (Bellei et al., 2020). This current investigation is interested in the sustainability of a PLC intervention in rural eastern Indonesia.

2.7 Objectives of the study

The overarching aim guiding this research was to identify the effectiveness of a PLC intervention for developing Indonesian EFL teachers' PCK for promoting HOT. It aimed to identify any influences of a PLC intervention on teachers' teaching practice and students' learning. In addition, it aimed to investigate the sustainability of the PLC approach to professional learning in the context of rural eastern Indonesia.

2.7.1 Objective phase 1:

To investigate the perspectives of EFL teachers on the state of their professional learning, their PCK and their needs related to teaching and promoting HOT among their students.

2.7.2 Objective phase 2:

- a) To introduce, implement and evaluate a PLC based on the literature.
- b) To improve the PCK of rural Indonesian teachers of EFL through establishing a PLC that addresses PCK by having teachers use the QTF to design and implement EFL lessons that facilitate HOT in their students.

- c) To improve rural Indonesian EFL teachers' attitudes and beliefs toward developing HOT in their students.
- d) To promote the development of PCK in rural Indonesian EFL teachers related to HOT goals and lesson activities.
- e) To improve rural Indonesian EFL teachers' reflective practice in the context of a PLC that employs VBR within the QTF.

2.7.3 **Objective phase 3:**

To identify the long-term effects and sustainability of a PLC intervention aimed at developing EFL teachers' PCK for teaching HOT in rural Indonesia.

2.8 **Summary**

This chapter discussed the value of professional learning for the development of teachers' PCK and highlighted the influence of teachers' knowledge on their teaching quality. It provided an outline of the role of PCK in teachers' teaching and showed how teachers' beliefs and attitudes impact their practice. It described the role of teachers' beliefs about promoting HOT in EFL teaching and learning. A PLC was described as an innovation that encourages development of teachers' knowledge, beliefs, attitudes, and professional agency. This collaborative approach to professional learning was described as emphasising active learning and reflective practice. There was also a discussion of the value of the QTF for structuring PLC activities and reflection. The role of video technology for encouraging teachers' reflective practice was discussed. It was argued that this type of professional learning is valuable if EFL teachers are to develop their professional agency for promoting HOT in their lessons. Finally, there was a discussion of sustainability factors for educational initiatives.

The next chapter describes the research methods employed in this study. It contains a discussion of the research design, research site, participants, research methods employed, data analysis procedure, the way validity

and reliability were established in each study comprising this investigation and any necessary ethical considerations.

CHAPTER 3 METHODOLOGY

3.1 Introduction

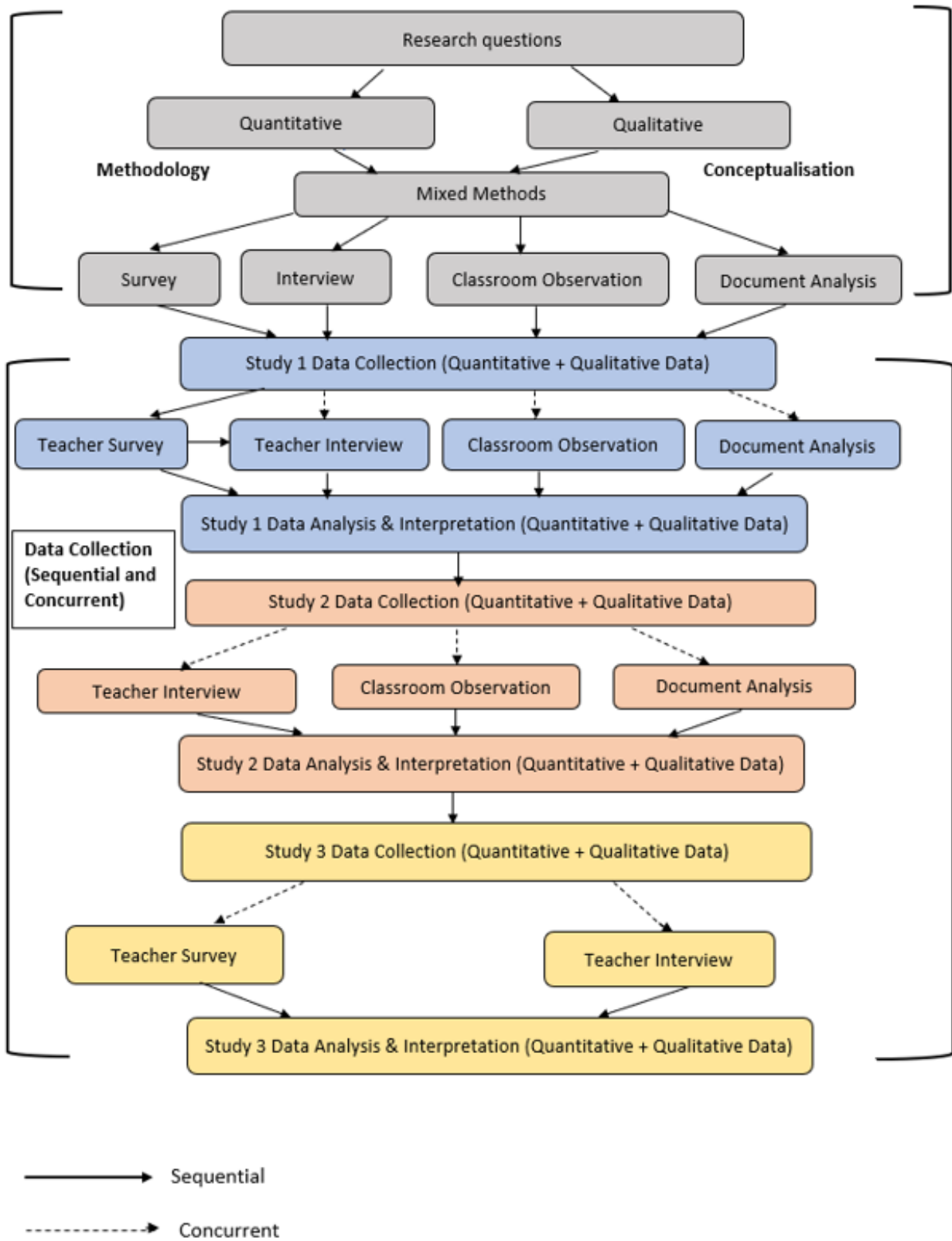
This chapter discusses the methodology used in this study. The first section presents the research design. It describes the site of the study, and the participants. Subsequent sections address the methods of data collection and analyses. Then, the trustworthiness of the study is discussed, followed by description of ethical considerations and clearances.

3.2 Research design

This section provides an overview of the design elements of this research. The following chapters (4, 5, 6) focus on the design of the three individual studies (1, 2, and 3). A mixed method design combining qualitative and quantitative data was used in this investigation to answer the research questions (McGregor, 2018). This approach was appropriate because mixed method research designs are “a procedure for collecting, analysing, and mixing both quantitative and qualitative methods in a single study or a series of studies to understand a research problem” (Creswell & Clark, as cited in Creswell, 2012, p. 535).

According to McGregor (2018), data collected in different stages of an investigation can be mixed during (a) the data collection stage, (b) the analysis or interpretation stage, as well as (c) across the whole study (data collection and data analysis) (p. 25). This investigation used various methods of data collection and employed an ‘embedded design’ for collecting and analysing quantitative and qualitative data concurrently and/or sequentially (Creswell, 2012). The investigation consisted of three studies that reflected a typical experimental design in which there is a pre-intervention study, a professional learning intervention study, and a post-intervention study. The research design is shown in Figure 3.1.

Figure 3.1 The research design for the three studies



In the three studies that comprised this investigation the following data collection methods were employed: a survey questionnaire, individual

interviews, classroom observations, and document gathering. The data were collected in sequential and concurrent processes as illustrated in Figure 3.1. Study 1 used the responses to a survey to inform the design of questions used in interviews conducted in the second stage of Study 1. It also included classroom observations, and collection of lesson plans for document analysis. In Study 2, interviews were carried out, classroom observations were conducted, and documents were collected. This was followed by the carrying out of a survey and individual interviews in Study 3. Data collection for this research was carried out over 12 weeks in one year and then 4 weeks a year later. Table 3.1 illustrates the timeline of data collection.

Table 3.1 The timeline of data collection

Data collection method	Time																
	Year 1												Year 2				
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	
Survey	X	X												X	X		
Interview			X									X				X	X
Observation			X	X	X	X	X	X	X	X	X	X					
Document collection			X	X	X	X	X	X	X	X	X	X					

Legend:

- Study 1
- Study 2
- Study 3

An experimental design was chosen because it can be used to evaluate the impact of professional learning, such as that designed for this investigation.

Experimental researchers test an idea (or practice or procedure) to determine its effect on an outcome. Researchers decide on an idea with which to “experiment,” assign individuals to experience it (and have some individuals experience something different), and then determine whether those who experienced the idea or practice performed better on some outcome than those who did not experience it. (Creswell, 2012, p.326)

In Study 1 a survey was employed to gain information about the population of the study (Creswell, 2012). The survey helped identify EFL teachers' professional learning and their needs related to their PCK for teaching HOT. It also provided base-line data for the analysis of any differences between teachers' PCK before and after the PLC intervention that is described in Study 3. The survey helped to recruit participants for Study 2. The information gained from Study 1 shaped and informed the focus of a PLC intervention (Study 2).

Study 2 employed a PLC intervention to develop EFL teachers' PCK for teaching HOT. The aim was to identify whether a PLC could contribute to developing teachers' PCK. For this reason, Study 2 employed a time series experimental design which, as Creswell described, "consists of studying one group, over time, with multiple pre-test and post-test measures or observations made by the researcher" (Creswell, 2012, p. 314). This study employed an equivalent time series experimental design where "the investigator alternates a treatment with a post-test measure. The data analysis then consists of comparing post-test measures or plotting them to discern patterns in the data over time" (Creswell, 2012, p. 314). Data collected from PLC participants were compared before and after a PLC intervention over the duration of ten weeks, to discern the impact of a PLC intervention on their PCK (Studies 1, 2 and 3). Creswell (2012) also suggested the use of a time series experimental design for small groups because: "this design does not require access to large numbers of participants, and it only requires one group for the study" (p. 314). Thus, the group of teachers in the PLC intervention group became its own control group in this design, where changes were measured across time within the participants.

Experimental study designs have been used previously to study PCK development in small groups of teachers. These studies have included: an investigation of PCK in three pre-service teachers (Aydin, Demirdogen, Nur Akin, Uzuntiryaki-Kondakci, & Tarkin, 2015), three pre-service

chemistry teachers (Aydin et al., 2013), three biology teachers (Rozenszajn & Yarden, 2014), three pre-service mathematics teachers (Yeşildere İmre & Akkoç, 2012), two novice teachers (Achinstein & Fogo, 2015), two physics teachers (Jang, Tsai, & Chen, 2013), two science teachers (Appleton, 2008), two novice history teachers (Monte-Sano & Budano, 2013) and one science teacher (Mulholland & Wallace, 2005). Those studies purposively selected very small numbers of participants because they wanted to have those who were seriously interested in the study involved, as shown in the observation by Jang et al. (2013) that: "The two instructors both were enthusiastic about teaching, gaining new knowledge and willing to make changes" (p. 31). Also, they selected only those participants who were willing to participate voluntarily in the studies (Aydin et al., 2015; Yeşildere İmre & Akkoç, 2012) and those who would complete the entire professional development program (Rozenszajn & Yarden, 2014, pp. 194-195). As Appleton (2008) explained when justifying the use of a purposive sample: "This purposive sample for the two case studies was chosen because they were among those teachers who demonstrated considerable, lasting change in their science teaching practices and provided rich data about the professional development mentoring." (p. 529).

In addition, Study 2 aimed to investigate the development of teachers' PCK over a ten-week intervention program in which they worked in a PLC, and then a year later after the program had been completed. Previous PCK research studies have shown that teachers' PCK studies may be conducted over a short time, such as fourteen weeks (Aydin et al., 2013), five months or even a full semester (Jang et al., 2013). They could also be carried out as longitudinal studies over other time periods, as in other studies: a ten-year period (Mulholland & Wallace, 2005), three years (Monte-Sano & Budano, 2013) or two years (Rozenszajn & Yarden, 2014). In Study 2 the focus was on investigating the development of teachers' PCK not only over the short time of an intervention, but also over a longer

time (as in a longitudinal study) in order to understand “teacher growth and sources of growth of a teacher’s PCK over time” (Mulholland & Wallace, 2005, p. 787). Hence, Study 2 provided information on both the short-term impact of an intervention on EFL teachers’ overall PCK and their PCK for teaching HOT. Studies 1, 2 and 3 employed various methods of data collection to improve the rigour of the study (as recommended by Blaikie, 2009; Somekh & Lewin, 2006; Twining, Heller, Nussbaum, & Tsai, 2017). While many studies on the impact of PLCs have employed self-reported data about teachers’ learning, including teacher surveys, interviews and inspecting teaching artefacts, very few have employed observations (Doğan, Pringle, & Mesa, 2016).

This investigation employed a case study approach because the study design required participants to make a long-term commitment to the project where they would be involved in the collection of data across an extended period of time. A case study approach allows researchers to “conduct in-depth, intensive exploration of one or more particular situations over a period of time (e.g., individuals, groups, programs, events, activities, processes)” (McGregor, 2018, p. 11). It is also effective for investigating “a contemporary phenomenon within its real-life context; when the boundaries between the phenomenon and context are not clear; and in which multiple sources of evidence are used” (Yin, 1989, p. 23). Another advantage of this approach is that it “allows the researcher to ‘go deep’, to learn what works and what does not” (Corcoran, Walker, & Wals, 2004, p. 10). A study relevant to this investigation did look at the development of teachers’ PCK in rural eastern Indonesia and employed a multi-case study approach (Triastuti, 2014, 2017). The case study approach facilitates an in-depth analysis of each teacher’s PCK development and to identify how it contributed to their attitudes, beliefs, and teaching actions related to teaching HOT. This, and other considerations discussed earlier, guided the design decisions of this investigation so that, within the scope of this research, a longitudinal in-

depth investigation could be carried out. Very few studies have measured the long-term impact of an intervention on teachers' PCK (Evens, Elen, & Depaepe, 2015). Study 3 addressed this gap by providing information on the long-term impact (across one year) of an intervention on EFL teachers' overall PCK and their PCK for teaching HOT. Also, it provided information on the sustainability of the PLC in the year following its completion.

3.3 Site of the study

This research was conducted in Bintang regency in East Nusa Tenggara (ENT) province in the eastern part of Indonesia.

The regency is in a remote location or outer region of Indonesia (see Figures 1.1 and 1.2 in Chapter 1). It is difficult and costly to reach the islands by boat or plane due to their remoteness and the fact that the weather is changeable and often dangerous. These factors have an influence on the availability of infrastructure, education facilities and resources available on the islands and have resulted in disparities in education quality within and between the regions of the ENT province. The complexities of the remote location of the islands also present challenges in accessing quality professional learning for teachers in the area. For these reasons, this area was selected because it typifies rural areas that have little support for teachers' professional learning and have been under-represented in previous research.

3.4 Participants in the study

There were about seventy-five to eighty EFL teachers working in Bintang regency in ENT province when this study was conducted. The sample of the study was chosen purposively based on teachers' interest in the study. Two groups of teachers participated in this investigation: the first group of teachers consisted of fifty-two EFL teachers who completed a survey, and the second group consisted of five EFL teachers drawn from

the larger group (see Section 3.4.2) who completed the survey and participated in a PLC intervention.

3.4.1 Survey participants

For Studies 1 and 3, the survey participants were the fifty-two EFL teachers of the total population of EFL teachers from 31 rural schools working in Bintang regency in ENT province who completed and returned a survey on two occasions (pre-intervention survey and post-intervention survey). Each of the fifty-two teachers was de-identified and given a number code so that their pre and post surveys could be matched. Any teachers participating in the initial survey were invited to express their interest in participating in the intervention study.

3.4.2 Professional learning participants

Of the fifty-two teachers who filled out the pre-intervention survey, forty-five expressed interest in participating in the intervention study. These participants were contacted and six expressed their serious commitment to participate in the next phase of this research, involving professional learning. Later, one of these dropped out of the study due to personal reasons unrelated to the study. Therefore, five of the fifty-two teachers from two junior high schools (School A and School B) volunteered to participate in the professional learning phase of this research (see Table 3.2 for information about the school contexts). They completed the entire program reported in this investigation. The same five teachers who participated in the interviews were observed during their teaching practice and teaching artefacts were collected from them. Pseudonyms were used to de-identify and keep the participants' identity anonymous. Any information that can identify the participants has been removed.

Table 3.2 Information about the school context

	School A	School B
Total number of EFL teachers	3	3
Total number of teachers	33	32
Total number of students	480	480
Class size	28	28

It was logical to work with teachers who were committed seriously to participating in a ten-week PLC intervention because they would need to work closely with the researcher and their colleagues in a PLC intervention designed to investigate changes in their PCK and practice. This small number of teachers was also appropriate because the researcher needed to be able to gain an insight into how a PLC model worked in this rural area. Longer term, it was of interest to understand how this PLC model worked on this small scale in order to gain insight into how it might be used with larger numbers of participants. Participants from School A were Diana, who was a forty-year-old, civil servant teacher who had taught EFL for seven years and was teaching grade seven at the time of the study. Petrus was a twenty-four-year-old contract teacher who had less than one year of teaching experience and was teaching grade eight. From School B, Melinda was a twenty-nine-year-old regency-based contract teacher who had five years teaching experience and was teaching grade nine. Steven was a fifty-five-year-old civil servant teacher who had twenty-four years teaching experience and was teaching grade seven. Ruben was a twenty-eight-year-old civil servant teacher who had two years teaching experience and was teaching grade eight.

They agreed to be interviewed before they started the professional learning phase of the study. These same participants participated in the PLC intervention (Study 2) and were interviewed, observed teaching in their classrooms, and had their teaching artefacts collected. A year after the completion of a PLC intervention, these EFL teachers were invited to another interview and four of the five teachers agreed, while one participant chose not to participate in the interview due to health reasons (Study 3). Table 3.3 outlines the number of participants in each of the three studies.

Table 3.3 Number of participants based on methods of data collection in each study

Study	Survey	Interview
Study 1 (Pre-Intervention)	52	5
Study 2 (Intervention)	0	5
Study 3 (post-Intervention)	52	4

3.5 Methods of data collection

Several data collection methods were used in this study, including survey questionnaires, semi-structured interviews, classroom observations and document collection (lesson plans and example of students' classroom work). Table 3.4 shows the materials used and whether they were translated and/or adapted (see Section 3.5.1).

Table 3.4 Materials used across the three studies

Materials	Source	translated	adapted
QTR survey	Gore et al., 2016	Yes	Yes
QTF observation template	Gore et al., 2016	Yes	No

QTF classroom practice guide	NSWDET, 2003	Yes	No
Revised Bloom's taxonomy table	Krathwohl, 2002	Yes	No

3.5.1 Survey questionnaire

The survey used in this research was adapted and translated from the Quality Teaching Rounds baseline survey, developed in Australia by Gore et al. (2016). The survey's validity and reliability have been assessed and reported on in previous studies (Gore et al., 2017; Gore et al., 2016). The researcher gained permission to adapt and employ the survey before administering it. The teacher survey items used in this study can be found in Appendices 1 and 2. While the original survey used in the Australian context has 79 items (Gore et al., 2016), a total of 15 items were not included in the Indonesian survey due to not being relevant for the Indonesian context. For example, item 4 was deleted because it asked whether the participant was of Aboriginal or Torres Strait Islander background or was non-aboriginal, and item 5 asked whether the person had a language background other than English. Survey can be found in Appendices 1 and 2.

The adapted survey had items on teachers' involvement in PLC activities (de-privatised practice, collaborative activity, and reflective dialogue), teacher responsibility for student learning, structural conditions (scheduled time for planning lessons), and human and social resources in schools (teacher-to-teacher trust, teacher respect and openness to innovation/appraisal and recognition of teachers) and future aspirations. The survey items also included questions about teachers' PCK and its relationship to other teacher knowledge categories; the items were related to the 18 elements of the Quality Teaching Framework (QTF) (Gore et al., 2016).

The adapted survey used in this investigation had 13 items related to teachers' involvement in PLC activities, such as being able to de-privatise their practice and engage in collaborative activity and reflective dialogue. It had 11 items on a teacher's responsibility for student learning; 4 items on structural conditions in the school, such as whether there were scheduled planning times; 6 items about human and social resources in schools that related to teacher-to-teacher trust, teacher respect and openness to innovation/appraisal and recognition of teachers' professional efforts. Four items related to teachers' future aspirations and 18 items were about the QTF elements. The groupings of the items used in this study were based on the recommendations of previous studies (Bryk & Schneider, 2003; Gore, et al., 2017; Marks & Louis, 1999; Louis et al., 1996).

The survey was a useful instrument to gain insight and knowledge related to this population (Creswell, 2012) of EFL teachers. The results of pre-intervention surveys were used to inform the focus and design of an intervention. In addition, the results of pre-intervention and post-PLC intervention surveys were used to compare changes in teachers' professional learning and PCK from before the intervention to a year after the intervention was carried out. The researcher translated the survey into the Bahasa Indonesia language to ensure participants would understand the items. Following the translation of the survey, another Indonesian native speaker, who is also fluent in English, was asked to back-translate it to check the wording and to ensure that the items conveyed the meaning of the original English-language survey as recommended by Son (2018) and Tyupa (2011).

Back-translation is currently the most popular tool for assessing the quality of translation used for cross-cultural social research purposes; there are no indications that any other methodology will replace it in the near future. Quality of translation is understood primarily as equivalence, and back-translation is used precisely to establish whether there is equivalence between the target and the source language versions. (Tyupa, 2011, p. 45)

It was estimated that the survey would take participants about 30 minutes to complete.

3.5.2 Interviews

A semi-structured interview was also employed in the research to ensure that the perspectives of the interviewees could be explored using probing questions related to the focus of the study and to ensure that important information was not missed. Interviews were carried out because they have been found to be beneficial for gaining information about participants' detailed views on specific topics and for providing information about teachers' level of use of their new knowledge (Guskey, 2000).

The semi-structured interview is an exploratory interview used most often in the social sciences for qualitative research purposes or to gather clinical data. While it generally follows a guide or protocol that is devised prior to the interview and is focused on a core topic to provide a general structure, the semi-structured interview also allows for discovery, with space to follow topical trajectories as the conversation unfolds. (Magaldi & Berler, 2020, p. 1)

Interviewees were given the opportunity to explain their answers to the questions in their own words in line with Creswell's (2012) recommendation that interviews should gain information from participants about their views on specific topics.

Researchers can use in-depth individual interviews with participants so as to gain insights into their inner world. The basic research protocol (procedure) is to enter the interview with (a) a set of open-ended questions (called an interview guide) and (b) a set of prompts or probes in case the conversation stalls or participants need clarification. (McGregor, 2018, p. 21)

Semi structured interviews were appropriate for data collection in this research because they enable the researcher to "gather information from key informants who have personal experiences, attitudes, perceptions and beliefs related to the topic of interest" (DeJonckheere & Vaughn, 2019, p. 2). The use of semi-structured individual interviews ensured that the

teachers could answer questions of interest in the study and that their answers could be explored (Magaldi & Berler, 2020). In this way their conceptualisations of PCK and perceptions of the impact of a PLC could be investigated. Semi-structured interviews can be “time-consuming, labour intensive, and require interviewer sophistication” (Adams, 2015, p. 493), but this method was deemed appropriate for the small number of participants in this study.

The semi-structured interviews aimed to identify teachers’ current PCK and their PCK needs (Study 1), then to investigate the immediate impact of a PLC on teachers’ PCK and teaching practice (Study 2) and finally to evaluate the long-term effects of a PLC intervention on teachers’ PCK after one year (Study 3). The elements of the QTF provided a valuable structure for the interview questions because they represent the five main components of PCK and helped identify EFL teachers’ PCK. The interview questions aligned with previous studies using the QTF (Gore & Bowe, 2015; Gore et al., 2016, pp. 62-63). They explored what teachers considered during their planning and teaching of EFL lessons in order to inform the focus of any intervention aimed at developing their PCK. This was done to elicit in-depth information from participants in relation to their perspectives on elements of QTF present or absent in their teaching. In addition, the QTF elements provided a useful way of evaluating changes in teachers’ PCK. A complete list of interview questions for Study 1 and Study 2 can be found in Appendices 4 and 5, and Study 3 in Appendices 6 and 7.

3.5.3 **Observation**

Classroom observation was used in this research because it provides researchers with an opportunity to gather firsthand information related to the study participants in their original setting (Creswell, 2012). Creswell argued that the advantages of observation include having the “opportunity to record information as it occurs in a setting, to study actual behaviour, and to study individuals who have difficulty verbalising their

ideas” (pp. 213-214). The observation method has disadvantages, which include being limited to one place and the difficulty of developing relationships with those being observed (Creswell, 2012). In this investigation, this limitation was addressed by employing video-based observation which allowed teachers to carry out their teaching responsibilities at the same time as the observation was being conducted. Video recordings of teachers’ teaching provided comprehensive evidence of their classroom practice. The use of video recording has been validated in previous studies of teachers’ professional development (Gaudin & Chaliès, 2015). Observation was appropriate for this study because previous PLC intervention studies have suggested that observations provide evidence of the impact of PLCs on teachers’ actual classroom practice (Doğan & Adams, 2018; Doğan et al., 2016), and provide insight into it (Depaepe et al., 2013; Evens et al., 2015).

This study followed Creswell’s (2012) recommendations for conducting observations: (1) Select the site and gain permission to the site, (2) Familiarise yourself with the site and establish relationships, (3) Determine the place and time for observations, (4) Choose the role of observer, (5) Do the observations several times, (6) Record observation data or make field notes, (7) Decide what type of information is to be recorded, (8) Write descriptive and reflective observation notes, (9) Respect the observation site, participants and events, and (10) Complete the observation respectfully.

Classroom observations investigated teachers’ PCK after receiving support in a PLC and enabled identification of how the intervention affected their teaching practice and students’ learning in the classroom. The observation was designed to capture the way teachers used their PCK as related to QTF elements in their classrooms with a view to improving their teaching of HOT within EFL lessons. It allowed an evaluation by the researcher and other teachers of their level of use of new knowledge gained in their PLC.

The QTF practice book (NSWDET, 2003) was used by each teacher because it included an explanation of each of the QTF elements and explained how each could be evaluated. This guide was translated into the Indonesian language to ensure each teacher would understand it well. The QTF observation template can be found in Appendices 8 and 9. Figure 3.2 shows an example of the description of the QTF element 'background knowledge' from the classroom practice guide that teachers referred to during their observation of video recordings of classroom teaching.

Figure 3.2 The description of the background knowledge element from the QT Classroom Practice Guide (NSWDET, 2003, p. 40)

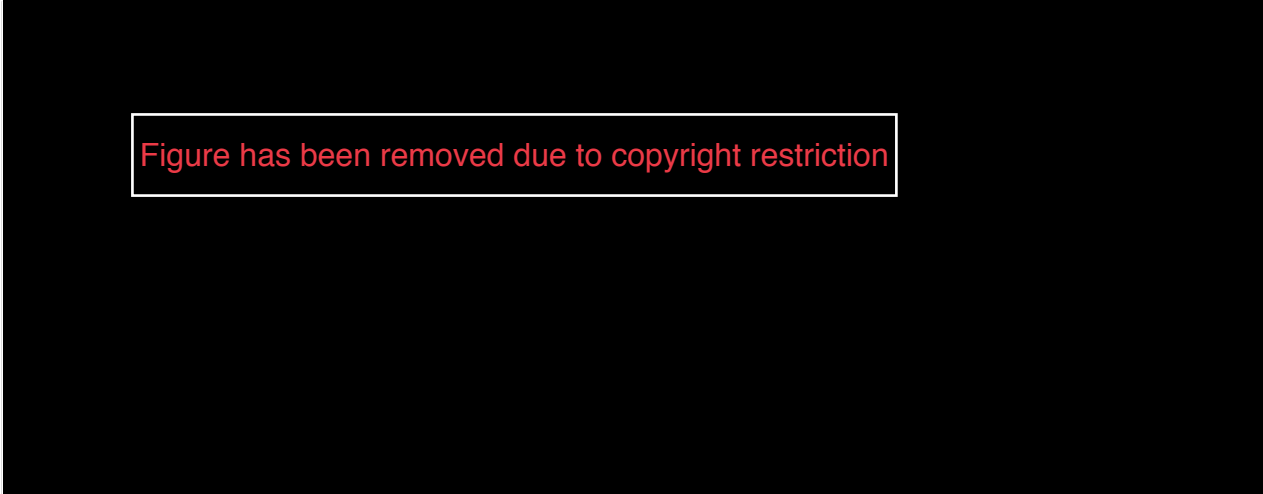


Figure has been removed due to copyright restriction

3.5.4 Document collection

Documents were another source of data collected in this study because they can be valuable resources in research that aims to provide insightful information about participants' teaching behaviours (Creswell, 2012). The documents were collected with the purpose of informing the intervention (in Study 2) and for pre- and post-intervention comparisons of teachers' practice. As recommended by Guskey (2000), the evidence collected included teachers' lesson plans and samples of students' work before the intervention and immediately after the PLC in order to provide information

related to the impact of professional learning in a PLC on teachers' practice and students' learning in relation to HOT. Although it is recommended to collect the same material after an intervention, this was not done a year later because teachers taught in different grade levels and taught different group of students.

Table 3.5 presents information related to types of data collected in the three studies comprising this investigation.

Table 3.5 Data collection methods in the three studies

Study	Survey	Semi-structured interview	Observation	Document
Study 1 (Pre-intervention)	X	X	X	X
Study 2 (Intervention)	-	X	X	X
Study 3 (Post-Intervention)	X	X	-	-

3.6 Methods of data analysis

The quantitative data from the survey questionnaires completed in Studies 1 and 3 and classroom observation data from Study 2 were analysed using statistical analysis. Thematic analysis was employed to analyse qualitative data from interviews, classroom observations and document analyses. Quantitative and qualitative data analyses were used to answer the research questions in each study.

3.6.1 Survey questionnaire

The survey questionnaires were analysed using descriptive statistics and inferential statistics.

3.6.1.1 Descriptive analysis

The questionnaire data were explored using descriptive statistics (Field, 2009). Responses to demographic and other variables were analysed for frequencies and percentages using SPSS program version 25 (IBM, 2018). The results of the descriptive data analysis from the pre-intervention survey in Study 1 informed and shaped the PLC intervention carried out in Study 2. This is further reported in Chapter 4.

3.6.1.2 Inferential statistics analysis

Inferential statistics were employed to analyse post-intervention survey data. The responses related to each variable were combined, based on the scale and literature relevant to this investigation (see Appendix 3). The response groups were based on the original QTR study groupings, including quality teaching, intellectual quality, quality learning environment, significance, teacher-to-teacher trust, teacher responsibility, morale, and appraisal and recognition (Gore et al., 2017). The means for each group were calculated using SPSS program version 25 (IBM, 2018) in order to calculate ANCOVA to compare pre- and post-intervention differences in EFL teachers' PCK and professional learning. After the data were explored, some outliers were identified and a bootstrapping procedure was performed for resampling and addressing outliers in the data (Haukoos & Lewis, 2005; Moore, McCabe, & Craig, 2009). This was done because bootstrapping "is a computationally intensive statistical technique that allows the researcher to make inferences from data without making strong distributional assumptions about the data or the statistic being calculated" (Haukoos & Lewis, 2005, p. 360).

An analysis of covariance or ANCOVA (Field, 2009) was also used to identify the changes in teachers' responses. This was carried out because ANCOVA "generally has greater statistical power to detect a treatment effect than the other methods" (Vickers & Altman, 2001, p. 1123), and it provides an accurate measure of any changes in the survey data including changes that may have occurred for other reasons as well as reducing

systematic bias due to non-randomisation in the post-test difference (Dimitrov & Rumrill Jr, 2003). Vickers and Altman explained that ANCOVA is valuable for comparing scores in groups because “in effect two parallel straight lines (linear regression) are obtained relating outcome score to baseline score in each group” (Vickers & Altman, 2001, p. 1123).

Since there was no randomisation between groups in the study, ANCOVA was useful for ensuring compatibility between treatment and control groups (Dimitrov & Rumrill Jr, 2003; Vickers & Altman, 2001). As explained by Dimitrov and Rumrill Jr, “With nonrandomized designs, the main purpose of ANCOVA is to adjust the post-test means for differences among groups on the pre-test, because such differences are likely to occur with intact groups” (2003, p. 161). ANCOVA has the added advantage of allowing “for modifications leading to appropriate analysis, whereas the gain score ANOVA does not” (Dimitrov & Rumrill Jr, 2003, p. 161). A comparison of the pre-intervention and post-intervention survey was made to identify whether any change was significant at “less than .05” (as recommended by Field, 2009, p. 415). The results of the ANCOVA analysis are reported in Chapter 6 and details of the analysis can be found in Appendix 19.

3.6.2 Interviews

Thematic analysis was used to analyse the interview transcripts because it “is a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes [your] data set in (rich) detail” (Braun & Clarke, 2006, p. 79). This analysis was carried out in NVivo version 12 (QSR, 2018). This qualitative data analysis followed Creswell’s (2012) recommendations as explained in the sub-sections below.

3.6.2.1 Exploring the general sense of data using deductive coding

In the first stage of data analysis the data were explored to gain a general and initial understanding (Creswell, 2012) of interview transcripts, videos,

and documents. Completion of this stage clarified that enough data had been collected to answer the research questions (Creswell, 2012).

Inductive and deductive coding were employed, where a pre-analysis codebook (based on the literature) was developed to guide the coding process; it consisted of various codes developed from the theoretical frameworks that the researcher adopted for the study (Appendix 11).

As recommended by Creswell (2012) and Saldaña (2009), the coding consisted of several stages including the steps of: carrying out an initial reading of the data, choosing parts that identify what the data is about, labelling the text segments using codes, checking repeated codes and combining them, and collapsing the codes under themes (Creswell, 2012). Coding was divided into precoding (reading the data to get familiar with it and highlighting it), and preliminary jottings (noting down any ideas for consideration during analysis). Reflective questions were posed during coding, such as those recommended by Emerson, Fretz, and Shaw (as cited in Saldaña, 2009, p. 16):

What are people doing? What are they trying to accomplish? How, exactly, do they do this? What specific means and/or strategies do they use? How do members talk about, characterize, and understand what is going on? What assumptions are they making? What do I see going on here? What did I learn from these notes? Why did I include them? (Emerson, Fretz, & Shaw, 1995, p. 146 as cited in Saldaña, 2009, p. 16)

3.6.2.2 Describing and developing themes from the data

Themes were developed from the codes, based on various research literature including Shulman's teaching knowledge base categories (1986, 2015), research literature on PCK (e.g., Magnusson, Borko, & Krajcik, 1999; Morine-Dershimer & Kent, 1999; Zembal-Saul, Starr, & Krajcik, 1999), the QTF elements (NSWDET, 2003, Gore, et al., 2016), Desimone's framework for studying the effect of professional development on teachers and students (2009), and the literature on the sustainability of educational innovations (e.g., Bellei, Morawietz, Valenzuela, & Vanni,

2020; Chambers, Glasgow, & Stange, 2013; Durlak & DuPre, 2008; Gu & Johansson, 2013; Scheirer, 2005). During the coding, various themes were developed such as: "ordinary themes, unexpected themes, hard to classify themes, and major and minor themes" (Creswell, 2012, p. 257). These themes were connected and categorised (Creswell, 2012); detailed examples can be seen in Table 4.3 in Chapter 4.

3.6.2.3 Layering themes and interrelating themes

Following the coding of the interview data, themes were developed from the research literature according to their similarity and relevance for answering the research questions developed for this investigation. For example, themes were grouped in terms of how the teachers' various knowledges were shaped and how they then informed their existing PCK, EFL teaching practice and beliefs before any intervention took place. Then the data were analysed within and between teachers to compare the data within and across cases to identify shared findings. Following this analysis, the data for each participant were crosschecked and merged to produce merged findings between participants. For example, data from the interviews relating to 18 QT elements were coded under the five PCK themes: PCK-EFL content knowledge (PCK-CK), PCK-EFL curriculum knowledge (PCK-CurrK), PCK-EFL general pedagogical knowledge (PCK-GenPK), PCK-knowledge of their EFL learners and their characteristics (PCK-KLLC), and PCK-knowledge of learners' educational contexts and cultures (PCK-ECC).

3.6.2.4 Representing and reporting the findings

In this stage, the key research findings were organised and presented to answer the research questions relevant to each of the three studies that reflected the study's experimental design; these were a pre-intervention (Study 1), an intervention (Study 2) and a post-intervention (Study 3). Chapter 4 reports the findings of Study 1 relating to teachers' existing professional learning, existing PCK, beliefs and teaching practices before the intervention. Chapter 5 reports the findings related to the impact of a

PLC intervention on teachers' PCK for teaching HOT. Chapter 6 describes Study 3 and reports the findings related to the long-term impact of a PLC intervention on teachers' teaching of HOT and its sustainability.

3.6.2.5 *Interpreting the findings*

The themes from the analysis of interviews were used to address the research questions developed for each of the three studies then the findings were explained, compared and evaluated and related to the research literature relevant to each one.

3.6.3 Observation

Video recordings of classroom observations were inspected and coded by teachers and the researcher, using the QTF classroom practice guide. The QTF observation sheet uses a scale of 1 to 5 (with 5 indicating more extensive use of the element) to provide clear indicators of teachers' level of use of each element. An example of the coding scale 1-5 for 'background knowledge' is shown in Figure 3.3.

Figure 3.3 Coding scale for the background knowledge element in the QT practice guide (NSWDET, 2003, p. 40)

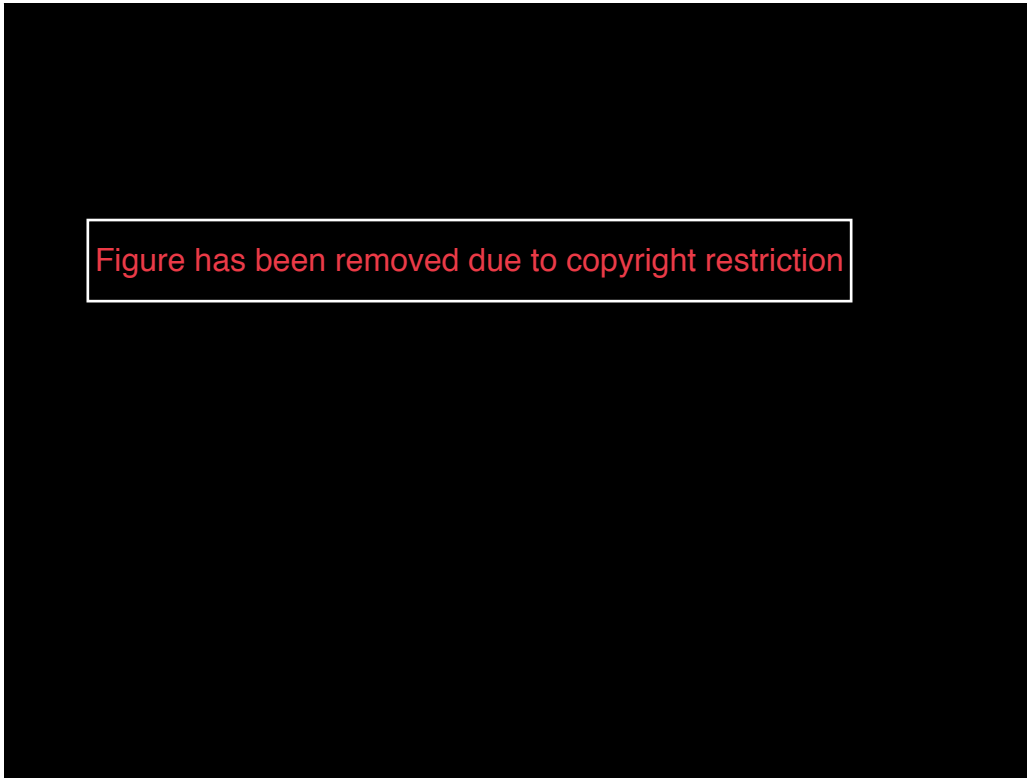


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3.6.3.1 Thematic analysis

In Study 1, thematic analysis was used to analyse the videos of teachers' teaching practice, because patterns or themes could be identified from the videos and observation notes. Information from classroom observations of teaching were carried out to cross check the interview data. The findings from classroom observations were organised based on the themes identified (see Table 4.3 in Chapter 4). Qualitative data analysis procedures as described by Creswell (2012) were followed as outlined in the section on interview data analysis (3.6.2). The procedures and resources from the QTF and QTR studies were used (NSWDET, 2003, Gore, et.al., 2016). The videos were watched, and observation codes were read to cross check the evidence of teachers' classroom practice in relation to the categories in the QTF observation sheet. Next, the data were organised based on the emerging themes or patterns that reflected the EFL teachers' current classroom practice, based on the QTF elements.

3.6.3.2 Inferential statistical analysis

In Study 2, the data derived from classroom observations of five EFL teachers were analysed using repeated measures ANOVA (Field, 2009) to identify change over time within each of the five participants. The classroom observation data analysis was carried out in SPSS version 25 (IBM, 2018). Comparing the pre-intervention observation and post-intervention observation was done to identify whether any change was significant at "less than .05" (as recommended by Field, 2009, p. 415).

3.6.4 Document analysis

Thematic analysis was used to analyse the documents from teachers' teaching practice and students' learning to find common themes. Lesson plans were read to cross check the alignment of the lesson plans with videos of teachers' classroom practices. The documents collected from teachers were checked for evidence of teaching and learning activities designed to develop HOT (analysing, evaluating, and creating); the revised Bloom's taxonomy (Krathwohl, 2002) was used to check for this evidence. No document analysis was carried out in Study 3 because any lesson plans or student work brought to interviews were treated as supporting documents for the interview because teachers had not been asked to submit documents at this time.

Finally, to answer the research questions in the three studies, the quantitative data were combined with the qualitative data. Table 3.6 summarises the research questions, the research methods used to collect the data and the data analysis techniques used in each of the three studies.

Table 3.6 Research questions, methods and analysis used in each of the three studies

Research questions	Methods				Analyses			
	Survey Questionnaire	Interview	Classroom observation	Document Collection	Descriptive statistical analysis	Repeated measure ANOVA statistical analysis	ANCOVA statistical analysis	Thematic analysis
Study 1								
1. What is the state of EFL teachers' professional learning in rural schools in eastern Indonesia?	✓				✓			
2. What is the state of EFL teachers' PCK in rural schools in eastern Indonesia?	✓	✓	✓	✓	✓			✓
3. What are the beliefs and practices of EFL teachers in relation to promoting HOT in rural schools in eastern Indonesia?	✓	✓	✓	✓	✓			✓
4. What are the PCK needs related to teaching HOT of EFL teachers in rural schools in eastern Indonesia?	✓	✓	✓	✓				✓
Study 2								
1. Has the PLC intervention designed for this study influenced EFL teachers' PCK? If so, in what way?		✓	✓	✓		✓		✓
2. Has the PLC intervention designed for this study influenced EFL teachers' PCK related to their beliefs and attitudes about teaching HOT, and their beliefs about students' ability to learn HOT in rural schools? If so, how?		✓	✓	✓				✓
3. Has the PLC intervention designed to improve EFL teachers' PCK influenced teachers' instruction to promote HOT? And if so, how/in what way?		✓	✓	✓		✓		✓
4. Does teaching of HOT influence rural students' use of HOT in EFL classes?				✓				✓
5. How useful is the QTF for structuring a professional learning intervention in the context of Indonesian schools in terms of promoting respectful communication and reflection on lesson planning and teaching?		✓						

6. Is the use of video-based discussion for EFL teachers' critical reflection on their practice an effective approach in a PLC? If so, in what way?	✓	✓	✓	✓
Study 3				
1. How sustainable are any gains from a PLC intervention designed to strengthen EFL teachers' PCK and develop their teaching practices in rural areas in Indonesia?	✓	✓	✓	✓
2. What are the challenges to sustaining the implementation of a PLC in rural schools in Indonesia?		✓		✓
3. What recommendations can be made to promote the long-term sustainability of a PLC in rural schools in Indonesia?		✓		✓

3.7 Trustworthiness of the Research

Research trustworthiness addresses issues related to the validity and reliability of the research (Creswell, 2012; Merriam, 2009). It was evaluated in this investigation by looking at how the data were collected, analysed, interpreted, and reported.

3.7.1 Internal Validity

Internal validity refers to the credibility of the study and the research findings (Merriam, 2009). The present investigation employed member checking to ensure that participants had the opportunity to clarify and verify that their interview data reflected the reality that the participants meant, as recommended by Creswell (2012) and Merriam (2009). After the interviews were transcribed, the interview transcripts were sent to the teachers so they could read them and eliminate any sensitive information that they did not want included in the data analysis. The participants were also asked to check the accuracy of the transcription.

3.7.2 External Validity

External validity is also referred to as transferability and “is concerned with the extent to which the findings of one study can be applied to other situations” (Merriam, 2009, p. 253). Although generalisation of findings was not the focus of the study, there was a possibility that findings from the study could reflect or be connected to similar settings. As explained by Merriam (2009), “Every study, every case, every situation is theoretically an example of something else. The general lies in the particular; that is, what we learn in a particular situation we can transfer or generalize to similar situations subsequently encountered” (p. 255). Hence, a comprehensive description of the context of the study can help others evaluate the applicability of the findings to their situation. This is done because “the researcher has an obligation to provide enough detailed description of the study’s context to enable readers to compare

the “fit” with their situations” (Merriam, 2009, p. 256). It is possible that the findings of this study could provide an insight into EFL teachers’ PCK or EFL teaching in similar settings in rural Indonesia.

3.7.3 Reliability

Reliability relates to the consistency of the study and refers to “the extent to which research findings can be replicated” (Merriam, 2009, p. 250). In this investigation, multiple data collection methods were employed to build the rigour of each study. This was done because, as Morrison and Luttenegger (2015) have acknowledged, with PCK being a complex concept, multiple data collection methods are needed to understand its growth. To this end, the investigation used triangulation of multiple data collection methods such as surveys, teaching observations, interviews, collection of teaching artefacts, and videos of teacher practices. This was done to understand EFL teachers’ PCK related to teaching HOT in their classrooms and to ensure the reliability of any findings and confirm their accuracy. In addition, inter-rater coding of the data was conducted to ensure the reliability of the codes as they related to the themes developed. The researcher employed peer examination of the codes as recommended by Merriam (2009). In this process, the researcher’s supervisors examined the codes and ensured that the codes reflected the data by coding translated samples of interview transcripts. The inter-rater coding process resulted in consistent codes being developed, thus improving the reliability of the data analysis.

3.8 Ethical clearances

Permission to conduct this study was sought and approved by the Social and Behavioural Research Ethics Committee (SBREC) at Flinders University (Project Number 7696; see Appendix 16). Ethical considerations stated in the Australian Code for the Responsible Conduct of Research, and the guidelines of the National Statement on Ethical

Conduct in Human Research, were adhered to. Permissions from the Indonesian Government were gained prior to the commencement of the study and letters of permission were obtained to conduct data collection in Bintang regency. In addition, permission was sought and granted by each school principal and teacher before the study was initiated.

When conducting this research, several ethical considerations were undertaken. Participants were informed of the purposes of the research at the beginning of the study and given a letter of introduction, an information sheet and written consent forms translated into the Indonesian language (see Appendix 16). They were informed that participation was voluntary and that they could withdraw at any time from the study without consequences. All records and data were managed in accordance with the guidelines of the Australian Code for the Responsible Conduct of Research. The data were stored in Flinders University computer's drive and only the researcher and her supervisors have access to it. To recognise the time spent by participating teachers, each one was given Australian cultural souvenirs as gratitude signs for their participation.

3.9 Summary

This investigation employed mixed methods throughout the data collection, analyses, and interpretation. The three studies reported in this thesis reflect the nature of the experimental design (Study 1/pre-intervention, Study 2/intervention and Study 3/post-intervention). Quantitative data were collected using surveys, interviews, classroom observations of teaching, and document analysis. Statistical analysis and thematic analysis were employed to analyse the data to answer the research questions developed for each of the three studies.

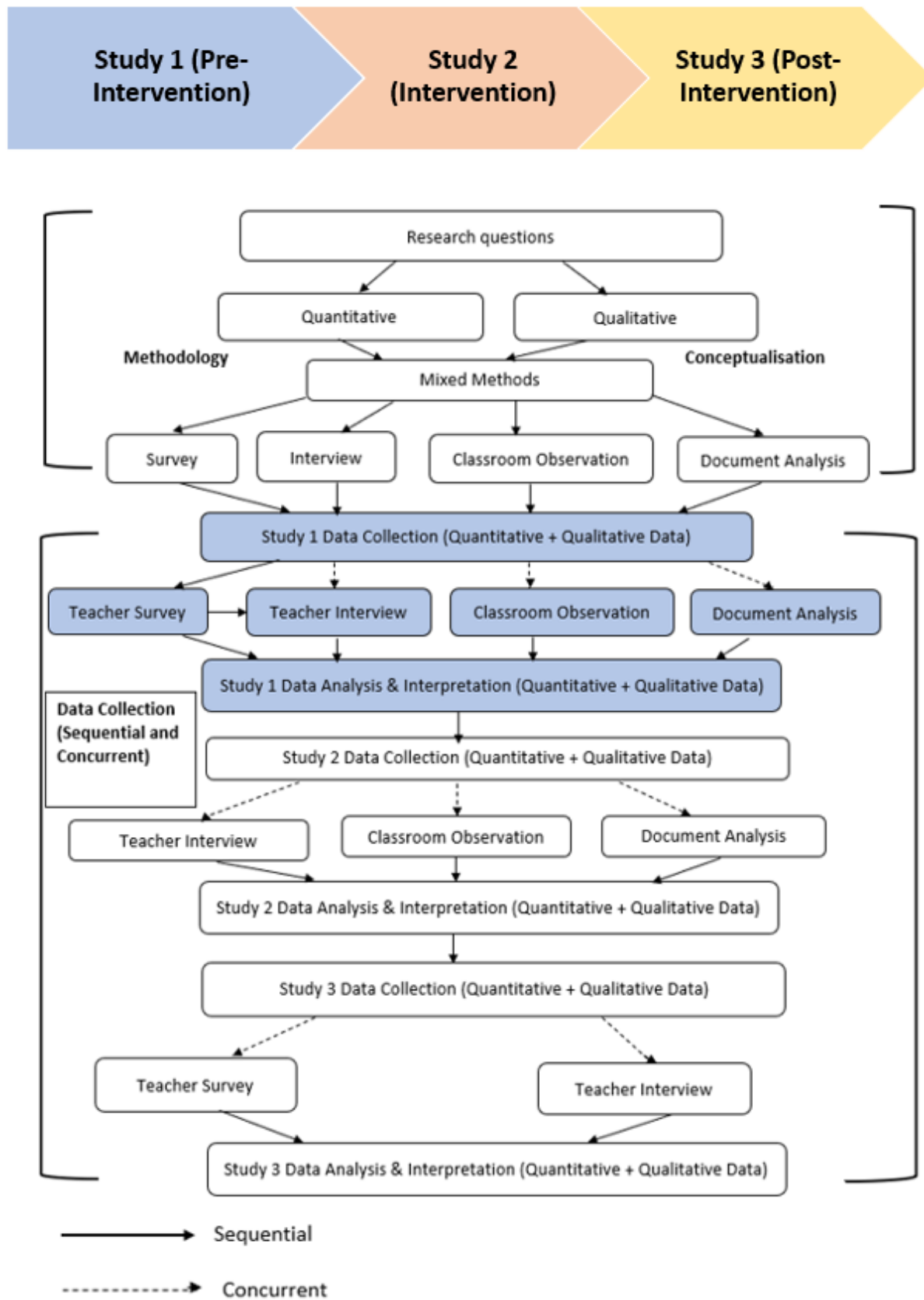
This chapter has provided an explanation of the research design across the three studies, described the site of the study, participants, methods of data collection and analysis, as well as outlining the trustworthiness procedures employed and ethical clearances obtained. The next chapter reports the data analysis and findings that relate to the research questions developed for Study 1.

CHAPTER 4 PEDAGOGICAL CONTENT KNOWLEDGE AND HOT PRACTICES: EFL TEACHERS' PERCEPTIONS

4.1 Introduction

This chapter presents the first of three studies, i.e., Study 1, reported in this research. The aim of this first study was to examine the pedagogical content knowledge (PCK) of teachers of English as a Foreign Language (EFL) and to investigate their teaching practices focussed on higher order thinking (HOT). It also examined the state of their professional learning experiences prior to this study. Study 1 findings served two additional purposes: a) inform planning of a PLC intervention (Study 2), and b) contribute to the evaluation of the sustainability of the PLC (Study 3) Connections between these three studies are shown in Figure 4.1.

Figure 4.1 The links between Study 1, Study 2, and Study 3



4.2 Literature review

In this chapter the focus is on Study 1, i.e., pre-intervention study. It presents a literature review of teachers' current professional learning, PCK, and their knowledge of teaching HOT in EFL lessons in Indonesia which informed the research questions and design of Study 1.

4.2.1 EFL teachers' professional learning in Indonesia

Many professional learning activities have been designed to help teachers improve their knowledge of how to provide effective teaching in the Indonesian context. However, many of the professional development activities are designed as a top-down approach by the government or professional learning providers without proper assessment of teachers' needs and the context of their teaching. This was shown in a study conducted to investigate EFL teachers' perception of government-based and self-directed professional development (PD) that revealed that the government's program had a top-down approach requiring teachers to participate regardless of the relevance of the content to their needs or context (Utami & Prestridge, 2018). Teachers preferred to do their own online professional development because they could find content that was relevant to their needs (Utami & Prestridge, 2018). Thus, it is important to ensure that professional learning programs for teachers are relevant and help them improve their knowledge and practice. Study 1 aimed to first understand teachers' needs and their teaching context before designing a professional learning program intervention (Study 2, reported in Chapter 5).

4.2.2 The need to assess EFL teachers' PCK

Ideally, EFL teachers should possess good PCK to provide effective EFL teaching to facilitate students' learning. However, Indonesian EFL teachers have limited PCK, such as PCK-general pedagogical knowledge and PCK-knowledge of student understanding (Ibrahim, 2016; Triastuti,

2014). The lack of this knowledge impacts on the quality of their teaching which contributes to lower student learning outcomes as shown in the results of many international tests (OECD, 2016a, 2016b, 2016c). This underlines the importance of understanding the state of EFL teachers' PCK and their professional learning needs before any professional learning intervention is designed or implemented, to ensure the initiative is relevant.

Another study conducted in Lampung, Indonesia, to investigate EFL teachers' PCK found that EFL teachers employed scaffolding activities, discussion, games, individual presentations, role plays, handouts, and colourful board markers in their teaching (Rido, Nambiar, & Ibrahim, 2016). While the teachers organised the students mostly in groups or pairs for learning tasks, the teachers spent much of their time managing students' behaviour and this hindered the learning process (Rido, Nambiar, & Ibrahim, 2016). The study showed that teachers need knowledge of various teaching strategies to help students learn, but this needs to be accompanied by a classroom atmosphere conducive to learning. Adequate knowledge about classroom management is needed because failure to provide a supportive classroom environment for student learning hinders the effectiveness of any teaching strategies (Weber, Gold, Prilop, & Kleinknecht, 2018; Wolff, Jarodzka, & Boshuizen, 2017). Teachers need to learn about how to improve their PCK and how to develop students' self-regulation of their behaviour. Knowledge of useful classroom activities alone does not ensure successful teaching and learning; teachers need to be able to integrate other knowledge categories, such as knowledge of classroom management, if they are to teach effectively (König & Kramer, 2016; Wolff et al., 2017).

A recent study into EFL teachers' language proficiency in Malang, East Java, found that Indonesian teachers had limited PCK-CK and that they

had low English proficiency (Wulyani, Elgort, & Coxhead, 2019). This was attributed to them not actively using their English language except in the classroom setting and to spending limited time reading or writing in English. Those EFL teachers preferred to use Bahasa Indonesia in their classroom teaching. English proficiency was lower for in-service EFL teachers than pre-service teachers in vocabulary, writing and reading skills. This was because the in-service teachers had limited opportunities to attend professional development programs to enhance their proficiency and knowledge due to school policies and limited funding being available to pay for professional development (Wulyani, Elgort, & Coxhead, 2019).

The studies discussed above have illustrated that there is a need for improvement of EFL teachers' PCK for EFL teachers in the western part of Indonesia. The studies showed some limitations in teachers' PCK that hindered teachers from being able to teach students effectively. Studies by a number of researchers (Rinantanti, et al., 2017; Rinantanti et al., 2019; Sikki, Rahman, Hamra, & Noni, 2013) have indicated that there is an educational disparity between the western and eastern parts of Indonesia in relation to teaching quality. However, there are very few studies that have assessed EFL teachers' PCK in eastern Indonesia, thus there is a need to understand the state of EFL teachers' PCK in the eastern part of Indonesia. There is a great need to assist EFL teachers in these areas to develop their PCK, thereby enhancing their teaching quality.

4.2.3 EFL teachers' knowledge of HOT

The current EFL curriculum in Indonesia, according to Minister of Education and Culture Policy Number 21 Year 2016, requires teachers to develop students' scientific learning and critical thinking (Kemendikbud, 2016). This highlights the importance of helping teachers to know how to do that (Bruning, Schraw & Norby, 2010). Critical thinking is based on

HOT, which refers to cognitive ability categories that require complex thinking as shown by *analysing, evaluating, and creating* (Krathwohl, 2002). However, Indonesian EFL teachers have limited understanding of HOT concepts or how to integrate them into EFL lessons. They tend to teach lower order thinking (LOT) such as remembering, understanding, and applying (Krathwohl, 2002) in their classrooms, with the result that students have little exposure to HOT in EFL classroom activities.

A small number of studies have been conducted in the Indonesian context to understand the place of HOT in EFL instruction (Djami & Kuswandono, 2020; Kusumastuti, Fauziati, & Marmanto, 2019; Tyas, Nurkamto, & Marmanto, 2020). One study carried out in Salatiga, Java, to identify EFL teachers' strategies for teaching HOT in their classrooms (based on EFL 2013 curriculum) showed that most teachers had misconceptions of HOT (Djami & Kuswandono, 2020). While saying they thought they had implemented teaching for the development of HOT, observations revealed that classroom activities were focussed on LOT. The teachers did not implement HOT in their classrooms because they considered that their students were not capable of learning HOT. Instead they used teacher-centred drill activities that required students to remember, repeat, understand, and apply instructions given by them (Djami & Kuswandono, 2020). That study suggests that HOT teaching and learning may be new for EFL teachers and they need to have professional learning focussed on developing their understanding of HOT and how they could integrate into their teaching.

Another recent study conducted in East Java with one EFL teacher found that she struggled to implement or transfer her HOT knowledge into her classroom practice (Tyas, Nurkamto, & Marmanto, 2020). The teacher did not understand how HOT could be taught to students with different English language proficiency, especially those with low English proficiency

levels. Students with low EFL proficiency relied heavily on teacher support to understand questions and to develop their HOT skills. This indicates again that EFL teachers in Indonesia need opportunities to develop their understanding of HOT concepts and how to integrate them into their teaching practice.

These studies show that having HOT as a curriculum requirement does not mean teachers are able to implement it in their classrooms without support. They point to a need for professional learning programs that enable teachers to understand HOT and learn how to develop and implement it in their EFL lessons. It is important to note that most of the studies in EFL have identified western Indonesian teachers' lack of understanding of HOT and how to develop it but there has been little research focusing on the teaching of HOT in EFL in eastern Indonesia. This study contributes to research that seeks a better understanding of HOT practices in the EFL teaching and learning context in eastern Indonesia. It also draws on this understanding in designing a targeted intervention intended to develop EFL teachers' PCK for teaching HOT (Study 2 in Chapter 5).

4.3 Research aim and research questions

The overall aim of this study has been to investigate the state of EFL teachers' professional learning and their PCK, to identify their beliefs and practices related to HOT teaching and learning and to obtain the perspectives of EFL teachers on their PCK needs for teaching and promoting HOT among students.

The research questions guiding the study reported in this chapter were:

- RQ 1. 1 What is the state of EFL teachers' professional learning in rural schools in eastern Indonesia?

- RQ 1. 2 What is the state of EFL teachers' PCK in rural schools in eastern Indonesia?
- RQ 1. 3 What are the beliefs, attitudes, and practices of EFL teachers in relation to promoting HOT in rural schools in eastern Indonesia?
- RQ 1. 4 What are the PCK needs related to teaching HOT of EFL teachers in rural schools in eastern Indonesia?

4.4 Methods

This section describes the methods for participant recruitment, data collection procedures, data preparation, and analysis. There were two phases in Study 1 with two groups from which data were collected. The first phase used a survey with a large group of teachers and the second phase collected data via interviews, classroom observations and documents. Ethical protocols were followed, as described in Chapter 3. Teachers had the right not to answer questions, to withdraw from the study and to request that the interview be stopped at any time, without negative consequences to them, as had been assured in the process of recruitment (informed consent). Table 4.1 summarises the research questions, the research methods used to collect the data and the data analysis techniques used in Study 1.

Table 4.1 Research questions, methods and analysis used in Study 1

Research questions	Methods					Analyses		
	Survey Questionnaire	Interview	Classroom observation	Document analysis	Descriptive statistical analysis	Repeated measure ANOVA statistical analysis	ANCOVA statistical analysis	Thematic analysis
1. What is the state of EFL teachers' professional learning in rural schools in eastern Indonesia?	√				√			
2. What is the state of EFL teachers' PCK in rural schools in eastern Indonesia?	√	√	√	√	√			√
3. What are the beliefs, attitudes, and practices of EFL teachers in relation to promoting HOT in rural schools in eastern Indonesia?	√	√	√	√	√			√
4. What are the PCK needs related to teaching HOT of EFL teachers in rural schools in eastern Indonesia?	√	√	√	√				√

4.4.1 Phase 1 of Study 1 – Survey

A survey is an extremely useful method for approaching questions related to the state of EFL teachers' professional learning in rural schools in Indonesia, gaining an indication of the state of their PCK, their beliefs and practices in relation to promoting HOT, and for identifying their PCK needs.

It is also useful for obtaining their views relating to their knowledge of HOT. The survey used in this study was adapted and translated from the Quality Teaching Rounds baseline survey, developed in Australia by Gore et al. (2016). The researcher translated the survey into Bahasa Indonesia to ensure participants would understand the items. The teacher survey items used in this study can be found in Appendix 1. While the original survey used in the Australian context by Gore et al. had 79 items, a total of 15 items were not included in the Indonesian survey due to them not being relevant to the Indonesian context. The survey items used in the survey are shown in Table 4.2.

4.4.1.1 Survey data collection procedure

Paper-based Quality Teaching Surveys (adapted from Gore et al., 2016) were distributed to 31 schools by the researcher through placing the surveys in teachers' pigeonhole in schools in Bintang regency to gain information about EFL teachers' PCK and professional learning activities. The researcher gave the survey and the information pack (containing a notice calling for participants, a letter of introduction, an information sheet, and an expression of interest for professional learning) in a sealed envelope to approximately 75 EFL teachers. The completed surveys were to be placed in a sealed box when completed by the teachers (see

Appendix 16). A second trip to each school was made by the researcher to collect the surveys.

4.4.1.2 Survey participants

Fifty-two EFL teachers (69,33 %) from 31 rural schools in a regency in East Nusa Tenggara (ENT) province, Eastern Indonesia, completed and returned the surveys.

4.4.1.3 Survey data preparation

The survey questionnaire responses were scanned, and a codebook was developed to guide the scoring of the responses from participants as recommended by Creswell (2012):

Preparing and organising data for analysis in quantitative research consists of scoring the data and creating a codebook, determining the types of scores to use, selecting a computer program, inputting the data into the program for analysis, and cleaning the data. (p. 175)

The codebook developed showed each variable in the survey. The 73 codes reflected the 73 variables measured by the survey and included items on teachers' involvement in professional learning activities (deprivatised practice, collaborative activity, and reflective dialogue), teacher responsibility for student learning, structural conditions (scheduled time for planning lessons), and human and social resources in schools (teacher-to-teacher trust, teacher respect and openness to innovation/appraisal and recognition of teachers) and future aspirations. The complete code book for survey items can be found in Appendix 3b. The items in the survey were based on previous studies (Bryk & Schneider, 2003; Gore et al., 2017; Louis et al., 1996; Marks & Louis, 1999; NSWDET, 2003). The survey items also included questions about teachers' PCK and its relationship to other teacher knowledge categories. The scores were developed to reflect the items from Gore's studies (2016, 2017). Each response was given an appropriate numerical score or value (0-9). The survey data were cleaned, screened, and checked to ensure

the data were input correctly to the SPSS program version 25 (IBM, 2018). Table 4.2 presents examples of the codebook for scoring the responses from the survey.

Table 4.2 Examples of codebook for numerical variable values for analysing the survey employed in the study

Survey Item	Label for Variable		Value	Label
Item 1	Age	Age_T1	1	20-30 years old
			2	31-40 years old
			3	41-50 years old
			4	51-70 years old
Item 2	Gender	Sex_T1	0	Female
			1	Male
Item 3	Bachelor of education	Bach_educ_T1	0	Not selected
			1	Selected
Item 4	Year work in this school	Work_Dur_In_School_T1	0	Less than 1 year
			1	1 year
			2	2 years
			3	3 years
			4	4-6 years
			5	7-9 years
			6	10-12 years
			7	13-15 years
			8	16-18 years
Item 6	Teachers' work status	Job_Sta_T1	1	Permanent Government Civil Servant (PNS)
			2	Non-Permanent Government Appointed Teacher (Guru Bantu)
			3	Regency Based- Contract Teacher (Guru Honor Daerah)
			4	Permanent Non-Government Teacher (Guru Tetap Yayasan)
			5	Non-Permanent Part-Time Teacher (Honorar)

Item 9.1	Received useful feedback from supervisor or peers	Deprivatised_teach_Rec_Perf_Feedback_T1	0	Never
			1	Once
			2	Twice
			3	3-4 times
			4	5-9 times
			5	10 more times
			996a	Not Applicable to me
Item 11	Typical planning period with other teachers	Collaborative_activity_Time_Plan_other_teachr_T2	1	0-10 minutes
			2	11-20 minutes
			3	21-30 minutes
			4	31-40 minutes
			5	41-50 minutes
			6	51-60 minutes
			7	61-70 minutes
			8	Over 70 minutes
997a	Missing data due to participant did not answer the question			

An analysis was conducted to identify missing data from the pre-intervention survey responses (SPSS version 25). It showed that 11 variables from the survey had some missing data. From 3,796 values in the pre-intervention survey responses, 39 values were missing (1.03 % overall). A pairwise deletion was applied for missing data to retain data for analysis, as suggested by Kang (2013) because “a pairwise deletion uses all information observed, it preserves more information than the listwise deletion, which may delete the case with any missing data.” (p. 404).

4.4.1.4 Survey data analysis

The survey data were examined to gain an understanding of the 52 EFL teachers' existing professional learning activities and their PCK in Bintang regency. The data were examined using descriptive statistics in SPSS version 25 (IBM, 2018) to calculate the frequency and percentage of responses to each variable of the survey to identify: EFL teachers' demographic information (items 1 to 6) and other variables related to their professional activities (items 7, 8, 9, 10, 11, 12, 13, and 14), their PCK for teaching HOT in EFL lessons (items 15 and 16), teacher responsibility for student learning (items 17 and 18), human and social resources for professional learning (items 17, 18 and 19) and the teacher's future aspirations (item 19). The analysis was carried out to gain an understanding of the current professional learning activities of the 52 EFL teachers and their PCK. Results of this data analysis are presented in Sections 4.5.1 and 4.5.3.

4.4.2 Phase 2 of Study 1 – Interviews

4.4.2.1 Interview data collection procedures

Individual interviews were conducted and audio-recorded in a private conference room in each school for the purpose of gaining information about what teachers considered when planning their classroom teaching. The scheduled meeting time for each interview was based on each teacher's availability. Prior to the interview, teachers were provided with water and a snack and asked to read the consent form again; at this time, they were given the opportunity to raise any questions, objections or seek further clarification before the interview began. Examples of questions used in the Study 1 interviews are presented in Table 4.3.

Table 4.3 Examples of interview questions in Study 1

Quality Teaching dimensions and elements	Pre-intervention questions:
Deep knowledge	Can you please explain the key concepts and the relationship of the concepts of this lesson?
Deep understanding	Can you tell me how students can demonstrate the main ideas and the relationship between the main ideas? How do your students demonstrate a meaningful understanding?
Problematic knowledge	How do you provide opportunity for students to ask follow up questions or to share their perspectives and understanding of the lesson?
Higher-order thinking	What is your understanding of Higher Order Thinking? To what extent does the lesson cover Higher Order thinking? Can you explain how this lesson provides opportunity for students to learn Higher Order thinking?

Teachers had been asked to bring samples of their lesson plans (one each) to the interview to facilitate the conversation cued by interview questions related to their teaching and their students' learning. They were asked to fill out background information to provide detailed demographic data before completing questions relating to the QTF (see Appendices 4 and 5).

4.4.2.2 Interview participants

Out of fifty-two EFL teachers who filled out the pre-intervention survey, five EFL teachers expressed their serious commitment to participating in the professional learning intervention. They did this by filling out an expression of interest form. Those teachers were invited to participate in the individual interview. Previous studies on teachers' PCK have also employed purposive samples with small numbers of participants who made a voluntary commitment to participate (Appleton, 2008; Aydin et al., 2013). Table 4.4 shows demographic information provided by the five teachers from two schools who volunteered to participate in the professional learning phase of this research.

Table 4.4 Demographic information from participants who volunteered for Phase 2 of Study 1

Participants	Gender	Age	Years of teaching experience	Working status	Grade taught
School A					
Diana	Female	40	7	Civil servant teacher	7
Petrus	Male	24	Less than 1	School contract teacher	8
School B					
Melinda	Female	29	5	Regency-based contract teacher	9
Steven	Male	55	24	Civil servant teacher	7
Ruben	Male	28	3	Civil servant teacher	8

4.4.2.3 Interview data preparation

The interview data were saved in the Flinders University’s computer drive before being transcribed in the Indonesian language and back-translated into English. The interview transcriptions were also sent to the teacher participants for member checking to confirm the content with them and to recheck the accuracy of the transcriptions, as recommended by Creswell (2012).

4.4.2.4 Interview data analysis

Thematic analysis was used to analyse the interview transcripts in Study 1 because it “is a method for identifying, analysing, and reporting patterns (themes) within data. It minimally organises and describes the data set in (rich) detail” (Braun & Clarke, 2006, p. 79). This qualitative data analysis followed recommendations made by Creswell (2012). The coding procedure and coding scheme were based on the 18 QTF elements

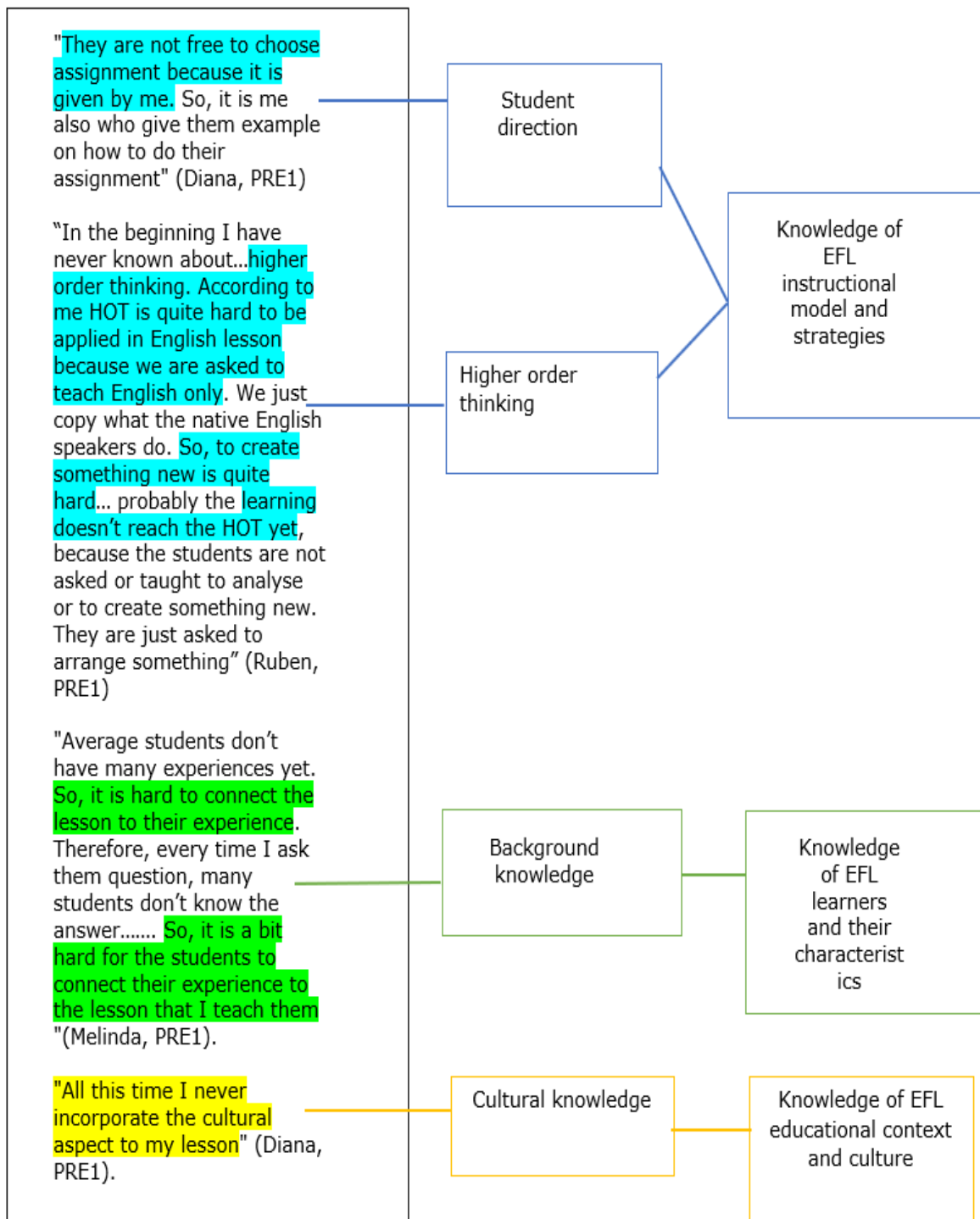
reported by Gore et al. (2016). There were 18 codes produced from the interview data analysis based on the QTF elements (Gore et al., 2016; NSWDET, 2003) and these were grouped into five themes related to teachers' PCK (Shulman 1987, 2015). Table 4.5 presents the themes and codes generated from teachers' pre-intervention qualitative data.

Table 4.5 Qualitative data themes and codes

Themes	Codes
EFL content knowledge	Deep knowledge, Metalanguage
EFL general pedagogical knowledge: <ul style="list-style-type: none"> • Knowledge of EFL instructional models and strategies • Knowledge of EFL classroom management and organisation • Knowledge of EFL classroom communication and discourse • Knowledge of EFL student assessment 	Higher order thinking, Student direction, Connectedness Engagement, Social support, Students' self-regulation, Inclusivity Substantive communication, High expectations, Narrative Explicit quality criteria
EFL curriculum knowledge	Knowledge integration
Knowledge of EFL learners and their characteristics: <ul style="list-style-type: none"> • Knowledge of students' understanding of EFL topics 	Problematic knowledge, Background knowledge, Deep understanding
EFL knowledge of learners' educational context and cultures	Cultural knowledge

Figure 4.2. presents an illustration of coding of the data in Study 1.

Figure 4.2 An illustration of coding of the data in Study 1



Following the identification of patterns and generation of common themes from the data, the interview text was coded in categories based on the QTF elements (metalinguage, HOT, and knowledge integration, etc.) (Gore et al., 2016; NSWDET, 2003). These categories were classified

under the sub-themes of teacher knowledge (EFL content knowledge, Knowledge of instructional models and strategies for teaching EFL, and EFL curriculum knowledge) (Shulman, 1987, 2015). The interview data were analysed using software NVivo version 12 (QSR, 2018).

4.4.3 Phase 2 of Study 1 – Classroom observations

4.4.3.1 Participants

The same five EFL teachers who participated in the interviews were observed during their teaching practice on two occasions for 60 – 90 minutes per lesson.

4.4.3.2 Observation procedures

Two lessons taught in their regular classrooms by the five EFL teachers who had participated in the interviews were observed by the researcher. These lessons were also video recorded and later watched by the teacher, researcher and members of the PLC. Before the observation took place, the researcher introduced herself to students, placed a video camera at the back of the classroom, and explained that the camera was positioned so that the teacher's work could be recorded and individual students' participation or performance would not be focussed on. The researcher remained in the classroom to record the lessons.

During the observation session, the researcher coded and noted each lesson video by using the QTF observation sheet which uses a low to high scale for coding the QTF elements (NSWDET, 2003). Procedures and resources from previous QTF studies were used (Gore et al., 2016) with Gore's permission, as indicated in Chapter 3. Making relevant notes related to each teacher's teaching provided a focus for the observation and helped in gaining information relating to their PCK that would allow a comparison to be made between teaching quality before the intervention and after.

Table 4.6 shows the topics taught by each teacher observed in Study 1.

Table 4.6 Pre-intervention lesson observations

Teacher	Topic of lesson observed	
	Lesson 1	Lesson 2
Petrus	Recount Text 'Past Experience'	Report Text
Diana	Time	Short interaction "Instruction"
Melinda	Short Functional Text	Recount Text
Steven	Time	Procedure Text
Ruben	Short interaction using "will"	Short interaction "Instruction"

4.4.3.3 Observation data preparation

The observation notes from the QTF observation sheet and videos of teaching practices were transferred, organised, and saved in two secure locations before being translated into English. The videos were watched, and observation notes were made by the observed teacher, other PLC teachers and the researcher. The researcher read the notes and watched the videos a second time to ensure the observation notes reflected the teaching observed. Observation data (notes) were labelled with a Study 1 observation phase identifier PRE-CO1 (classroom observation one).

4.4.3.4 Analysing the observation data

Thematic analysis was used to analyse the observation notes and videos of teachers' teaching practice, to identify patterns or themes. Qualitative data analysis procedures were followed as outlined in Creswell's (2012) outline of interview data analysis, including the use of NVivo v.12 (QSR, 2018). Next, the emerging themes or patterns that reflected the EFL teachers' current classroom practice were organised into five PCK components based on the QTF elements (NSWDET, 2003). Table 4.7 shows an example of the way the observation data were organised based on the QTF elements.

Table 4.7 Example of qualitative data analysis for observation data

EFL teachers' PCK components based on literature	QTF elements	Example of QTF observation notes
EFL content knowledge	Deep knowledge	Teacher explains the concept of the lesson, but the explanation is not deep and shows only lower order thinking skills such as copying and applying a concept (Diana, PRE-CO1).
EFL general pedagogical knowledge: <ul style="list-style-type: none"> <li>• Knowledge of EFL instructional models and strategies 	Metalinguage	Teacher explains the vocabulary in the lesson and asks for word for word translations most of the time (Diana, PRE-CO1).
<ul style="list-style-type: none"> <li>• Knowledge of EFL student assessment 	Higher order thinking	Teacher teaches lower order thinking skills to students and does not provide opportunities for students to develop their HOT by providing HOT activities (Diana, PRE-CO1).
	Student direction	Teacher arranges and directs learning activities during the lesson most of the time (Diana, PRE-CO1).
	Connectedness	The lesson lacks connection to the outside world (Diana, PRE-CO1).
EFL curriculum knowledge	Explicit quality criteria	There are no explicit criteria related to quality given to students during the lesson (Diana, PRE-CO1).
Knowledge of EFL learners and their characteristics: <ul style="list-style-type: none"> <li>• Knowledge of students' understanding of EFL topics 	Knowledge integration	There are no meaningful connections made to other topics and the teacher only discusses the topic taught (Diana, PRE-CO1).
EFL knowledge of educational context and cultures	Deep understanding	A few students show their understanding of the concept, but not all (Diana, PRE-CO1).
	Cultural knowledge	Teacher does not mention any cultural knowledge in the lesson (Diana, PRE-CO1).

4.4.4 Phase 2 of Study 1 - Document collection

4.4.4.1 Document data preparation

The lesson plans and student work samples were scanned, labelled, and saved in the Flinders University's computer drive before being examined. Some lesson plans and students' work samples that were slightly different from the classroom lesson observed were excluded from analysis. This was done to ensure that only documents relevant to the observed lessons were analysed.

4.4.4.2 Document analysis

Thematic analysis was used to analyse lesson plans which were read and cross checked with the videos to ensure that the submitted lesson plans aligned with videos of teachers' observed lessons. The written lesson plans were inspected to examine the quality of planning and in relation to teachers' PCK and strategies for teaching HOT skills.

Students' work samples were analysed using the revised Bloom's taxonomy in order to identify any evidence of HOT (Krathwohl, 2002, pp.215-216). Table 4.8 shows an example of the way the lesson plan and students' work samples were analysed for one teacher (Petrus' lesson on 'Recount text'). An X denotes the element was found in the document and a dash means the element was absent from the document.

Table 4.8 Example of the analysis of a lesson plan about 'Recount Text' and a student's work analysis based on the revised Bloom's taxonomy (Krathwohl, 2002, pp.215-216)

Table has been removed due to copyright restriction

4.5 Findings

This section reports the findings from Study 1 based on the research questions investigated from phase 1 of this study with the large group of teachers (n=52), and phase 2 with a smaller group of teachers (n=5). Each research question is addressed in a separate section, i.e., RQ1 in section 4.5.1; RQ2 in section 4.5.2; RQ3 in section 4.5.3 and RQ4 in section 4.5.4.

The findings reported relate to individual interviews, all observations and lesson videos and documents (lesson plans and students' classroom work related to the lessons taught).

4.5.1 The state of EFL teachers' professional learning

This section addresses research question (RQ 1) about the state of EFL teachers' professional learning in rural schools in eastern Indonesia.

Of the 52 returned surveys (69.33 %), the majority of EFL teachers in the rural Bintang regency indicated they had completed their Bachelor of Education (92.3%) and some had gained accelerated teacher training before joining the teaching workforce (21.2%). More than seventy per cent of the teachers (71.2%) had less than six years' teaching experience, indicating it was early career teachers who were interested in pursuing the professional development offered. This was in line with findings from a USA study reporting that teachers in their "first four years in the classroom were most receptive to PD initiatives" (Torff & Sessions, 2008, p. 131) and suggests that reflective and collaborative professional learning might be especially important for teachers new to the teaching profession (Kang & Cheng, 2014).

The first PLC variable measured was **de-privatised teaching**, which refers to teachers' willingness to open their classroom to observation and being observed by others in an effort to improve their teaching practice by receiving feedback from other teachers and through providing feedback to each other (Louis et al., 1996). The analysis revealed that many teachers stated they had never observed another teacher's classroom (59.6%) or been observed by another teacher in their school (71.2%) during that year (as shown in Table 4.9). Just over half of the teachers either never or only once had received useful suggestions from their supervisors or teaching peers in their school (53.8%). These responses indicated that more than half the EFL teachers in the study said they had few opportunities to engage in de-privatised practice in their schools in that year.

Table 4.9 Frequency analysis for survey item: De-privatised practice

Big themes	Values	Frequency	Per cent	Valid Per cent	Cumulative Per cent
De-privatised practice	Observe another teacher (item 7)				
	Never	31	59.6	59.6	59.6
	1 time	4	7.7	7.7	67.3
	2 times	5	9.6	9.6	76.9
	3 times	6	11.5	11.5	88.5
	4 times	1	1.9	1.9	90.4
	5 times	1	1.9	1.9	92.3
	More than 8 times	4	7.7	7.7	100.0
	Total	52	100.0	100.0	
	Observed by another teacher (Item 8)				
	Never	37	71.2	71.2	71.2
	1 time	6	11.5	11.5	82.7
	2 times	3	5.8	5.8	88.5
	3 times	2	3.8	3.8	92.3
	5 times	2	3.8	3.8	96.2
	More than 8 times	2	3.8	3.8	100.0
	Total	52	100.0	100.0	
	Useful Feedback from Supervisor or peers (9.1)				
	Never	11	21.2	21.2	21.2
	Once	17	32.7	32.7	53.8
	Twice	7	13.5	13.5	67.3
3-4 times	13	25.0	25.0	92.3	
5-9 times	1	1.9	1.9	94.2	

	10 or more times	3	5.8	5.8	100.0
	Total	52	100.0	100.0	

The next PLC practice measured by the survey was **collaborative activity**, which refers to collective activity that encourages teachers to share their expertise and skills with each other to support and enhance their practice (Louis & Marks, 1996). The analysis again revealed that the EFL teachers indicated they had rarely received useful suggestions from their colleagues in their schools about curriculum materials, their teaching practice or assessment materials during the year (19.2%, 26.9% and 17.3% respectively). Table 4.10 shows the frequency of teachers' professional collaborative activity.

Table 4.10 Teachers' Professional Collaborative Activity Frequency

Big themes	Value s	Freque ncy	Per cent	Valid Per cent	Cumul ative per cent
	Received useful suggestions for curriculum materials from immediate colleagues (item 9.2)				
Collaborative activity	Never	10	19.2	19.2	19.2
	Once	10	19.2	19.2	38.5
	Twice	15	28.8	28.8	67.3
	3-4 times	11	21.2	21.2	88.5
	5-9 times	4	7.7	7.7	96.2
	10 more times	2	3.8	3.8	100.0
	Total	52	100.0	100.0	

Received useful suggestions for teaching practice from your colleagues (item 9.3)

Never	14	26.9	26.9	26.9
Once	14	26.9	26.9	53.8
Twice	14	26.9	26.9	80.8
3-4 times	5	9.6	9.6	90.4
5-9 times	2	3.8	3.8	94.2
10 more times	3	5.8	5.8	100.0
Total	52	100.0	100.0	

Received useful suggestions for assessment materials from your colleagues (item 9.5)

Never	9	17.3	17.3	17.3
Once	13	25.0	25.0	42.3
Twice	13	25.0	25.0	67.3
3-4 times	14	26.9	26.9	94.2
5-9 times	3	5.8	5.8	100.0
Total	52	100.0	100.0	

The percentage of average time spent by teachers on professional collaborative activities in their school per month is shown in Table 4.11.

Table 4.11 Percentage of time spent on professional collaborative activity per month

Big themes	Values	Frequency	Per cent	Valid Per cent	Cumulative per cent
Average time spend on lesson planning per month (item 14.1)					
PLC- Collaborative activity	None	2	3.8	3.8	3.8
	0-1 hour	12	23.1	23.1	26.9
	1-2 hours	13	25.0	25.0	51.9
	2-3 hours	10	19.2	19.2	71.2
	3-4 hours	3	5.8	5.8	76.9
	4-5 hours	1	1.9	1.9	78.8
	6-7 hours	2	3.8	3.8	82.7
	8-9 hours	4	7.7	7.7	90.4
	11-12 hours	2	3.8	3.8	94.2
	More than 12 hours	3	5.8	5.8	100.0
	Total	52	100.0	100.0	
Average time spend on curriculum development per month (item 14.2)					
None	12	23.1	23.1	23.1	
0-1 hour	8	15.4	15.4	38.5	
1-2 hours	14	26.9	26.9	65.4	
2-3 hours	5	9.6	9.6	75.0	
3-4 hours	1	1.9	1.9	76.9	
4-5 hours	1	1.9	1.9	78.8	
5-6 hours	2	3.8	3.8	82.7	
6-7 hours	3	5.8	5.8	88.5	
7-8 hours	2	3.8	3.8	92.3	
8-9 hours	1	1.9	1.9	94.2	

9-10 hours	1	1.9	1.9	96.2
11-12 hours	2	3.8	3.8	100.0
Total	52	100.0	100.0	

Average time spend on guidance and counselling per month (item 14.3)

None	11	21.2	21.2	21.2
0-1 hour	14	26.9	26.9	48.1
1-2 hours	12	23.1	23.1	71.2
2-3 hours	4	7.7	7.7	78.8
3-4 hours	7	13.5	13.5	92.3
6-7 hours	1	1.9	1.9	94.2
7-8 hours	1	1.9	1.9	96.2
9-10 hours	1	1.9	1.9	98.1
More than 12 hours	1	1.9	1.9	100.0
Total	52	100.0	100.0	

Average time spend on evaluation of programs per month (item 14.4)

None	6	11.5	11.5	11.5
0-1 hour	15	28.8	28.8	40.4
1-2 hours	15	28.8	28.8	69.2
2-3 hours	7	13.5	13.5	82.7
3-4 hours	5	9.6	9.6	92.3
4-5 hours	1	1.9	1.9	94.2
5-6 hours	2	3.8	3.8	98.1
More than 12 hours	1	1.9	1.9	100.0
Total	52	100.0	100.0	

Average time spend on planning assessments per month (item 14.5)

None	9	17.3	17.3	17.3
0-1 hour	20	38.5	38.5	55.8

1-2 hours	15	28.8	28.8	84.6
2-3 hours	2	3.8	3.8	88.5
3-4 hours	3	5.8	5.8	94.2
4-5 hours	2	3.8	3.8	98.1
11-12 hours	1	1.9	1.9	100.0
Total	52	100.0	100.0	

Average time spend on other collaborative work related to instruction per month (14.6)

None	7	13.5	13.5	13.5
0-1 hour	17	32.7	32.7	46.2
1-2 hours	13	25.0	25.0	71.2
2-3 hours	6	11.5	11.5	82.7
3-4 hours	3	5.8	5.8	88.5
4-5 hours	3	5.8	5.8	94.2
5-6 hours	1	1.9	1.9	96.2
11-12 hours	1	1.9	1.9	98.1
More than 12 hours	1	1.9	1.9	100.0
Total	52	100.0	100.0	

The results of the analyses shown in Table 4.11 indicate that half the teachers (51.9%) spent less than two hours on average per month on lesson planning. Over half the teachers (65.4%) spent less than two hours on curriculum development, 71.2% less than two hours related to guidance and counselling, 69.2% less than two hours on evaluation of programs, 71.2% less than two hours on other collaborative work related to instruction, and 84.6% spent less than two hours on planning assessment. Overall, the teachers' responses indicated they were spending little time on activities related to collaborative planning of their teaching.

The third PLC feature measured was **reflective practice**, which refers to teachers looking into their practice and discussing it to understand it better (Louis et al., 1996). The survey responses revealed the majority of teachers spent little time per month reflecting on specific teaching strategies with their colleagues (88.5%). Table 4.12 shows the percentage frequency of teachers' reflective practice.

Table 4.12 Percentage frequency of Teachers' reflective practice

Big themes	Values	Frequency	Per cent	Valid Per cent	Cumulative per cent
PLC- Reflective Dialogue	Met with colleagues to discuss specific teaching strategies with colleagues (item 9.4)				
	Never	3	5.8	5.8	5.8
	Once	10	19.2	19.2	25.0
	Twice	15	28.8	28.8	53.8
	3-4 times	18	34.6	34.6	88.5
	5-9 times	4	7.7	7.7	96.2
	10 more times	2	3.8	3.8	100.0
	Total	52	100.0	100.0	100.0

The analysis of the pre-intervention survey completed by 52 teachers showed they had limited opportunities to de-privatise their practice, engage in collaborative activity and participate in reflective dialogue as part of their professional learning.

The survey also measured structural conditions in schools for professional learning, which refers to having scheduled planning times for teachers (Louis et al., 1996). Table 4.13 outlines the structural conditions related to time availability for professional learning in the schools.

Table 4.13 The structural conditions (time) for professional learning in schools

Big themes	Values	Frequency	Per cent	Valid Per cent	Cumulative per cent
structural conditions (schedule planning time)	Participating in regular scheduled planning with other teachers (item 10)				
	No	21	40.4	40.4	40.4
	Yes	31	59.6	59.6	100.0
	Total	52	100.0	100.0	
	Typical planning period with other teachers (item 11)				
	0-10 minutes	11	21.2	21.2	21.2
	11-20 minutes	11	21.2	21.2	42.3
	21-30 minutes	9	17.3	17.3	59.6
	31-40 minutes	3	5.8	5.8	65.4
	41-50 minutes	2	3.8	3.8	69.2
	51-60 minutes	6	11.5	11.5	80.8
	61-70 minutes	1	1.9	1.9	82.7
	Over 70 minutes	9	17.3	17.3	100.0
	Total	52	100.0	100.0	
	Average meeting with other teachers for a planning period (item 12)				
	Less than once per week	28	53.8	53.8	53.8
	Once per week	14	26.9	26.9	80.8
	Twice per week	6	11.5	11.5	92.3

5 or more times per week	4	7.7	7.7	100.0
Total	52	100.0	100.0	

Average time regularly scheduled for planning and preparation during work time per week (item 13)

No time scheduled	24	46.2	46.2	46.2
1-29 minutes scheduled per week	11	21.2	21.2	67.3
30-59 minutes scheduled per week	5	9.6	9.6	76.9
60-89 minutes scheduled per week	5	9.6	9.6	86.5
2-3 hours scheduled per week	7	13.5	13.5	100.0
Total	52	100.0	100.0	

The results of the analysis indicated that just over half of the teachers stated they participated with other teachers in regular scheduled planning times (59.6%). They also indicated they typically spent less than 30 minutes (59.6%), met once or less than once per week to plan with other teachers (80.8%), and spent no time or less than 29 minutes planning and preparing lessons during work time each week (67.3%). These findings reveal the teachers had little regular scheduled meeting time to plan and prepare their lessons either individually or collaboratively, which could explain why they reported spending little time on this activity.

When asked about their future aspirations, more than 70 per cent of teachers indicated a strong desire to make their best effort as teachers

(32.7% highly and 46.2% extremely). They also reported they wanted to continue their work as teachers (53.8% extremely and 42.3% highly). In addition, they had a strong wish to pursue professional learning in order to improve their teaching (59.6% extremely and 30.8% highly) and more than half wanted to have some leadership responsibility in their schools (40.4% extremely and 19.2% highly). These ratings indicate that the teachers were interested in their chosen profession and wished to enhance their teaching quality by engaging in professional learning activities, suggesting they were open to involvement in a PLC intervention. Teachers' future aspirations are shown in Table 4.14.

Table 4.14 Teachers' Future Aspirations

Big themes	Values	Frequency	Per cent	Valid Per cent	Cumulative per cent
Teachers' future aspirations -professional learning	How much effort do you plan to exert as a teacher (item 19.1)				
	Slightly	2	3.8	3.8	3.8
	Moderately	9	17.3	17.3	21.2
	Highly	17	32.7	32.7	53.8
	Extremely	24	46.2	46.2	100.0
	Total	52	100.0	100.0	
	To what extent do you aim to continue learning how to improve your teaching skills (item 19.3)				
	Slightly	1	1.9	1.9	1.9
	Moderately	4	7.7	7.7	9.6
	Highly	16	30.8	30.8	40.4
Extremely	31	59.6	59.6	100.0	
Total	52	100.0	100.0		

T e a c h e r s'

		How sure are you that you will stay in the profession (item 19.2)				
		Moderately	2	3.8	3.8	3.8
		Highly	22	42.3	42.3	46.2
		Extremely	28	53.8	53.8	100.0
		Total	52	100.0	100.0	
		To what extent do you aim to have leadership responsibility in schools (item 19.4)				
Teachers' future aspirations - leadership		Not at all	1	1.9	1.9	1.9
		Slightly	7	13.5	13.5	15.4
		Moderately	13	25.0	25.0	40.4
		Highly	10	19.2	19.2	59.6
		Extremely	21	40.4	40.4	100.0
		Total	52	100.0	100.0	

In conclusion, quantitative data analysis of the survey carried out with 52 teachers in a rural regency in Indonesia showed that over half of the EFL teachers had little access to professional learning activities in their schools, had little scheduled time to plan and prepare lessons and that they were willing to engage in professional learning activities to improve the quality of their teaching.

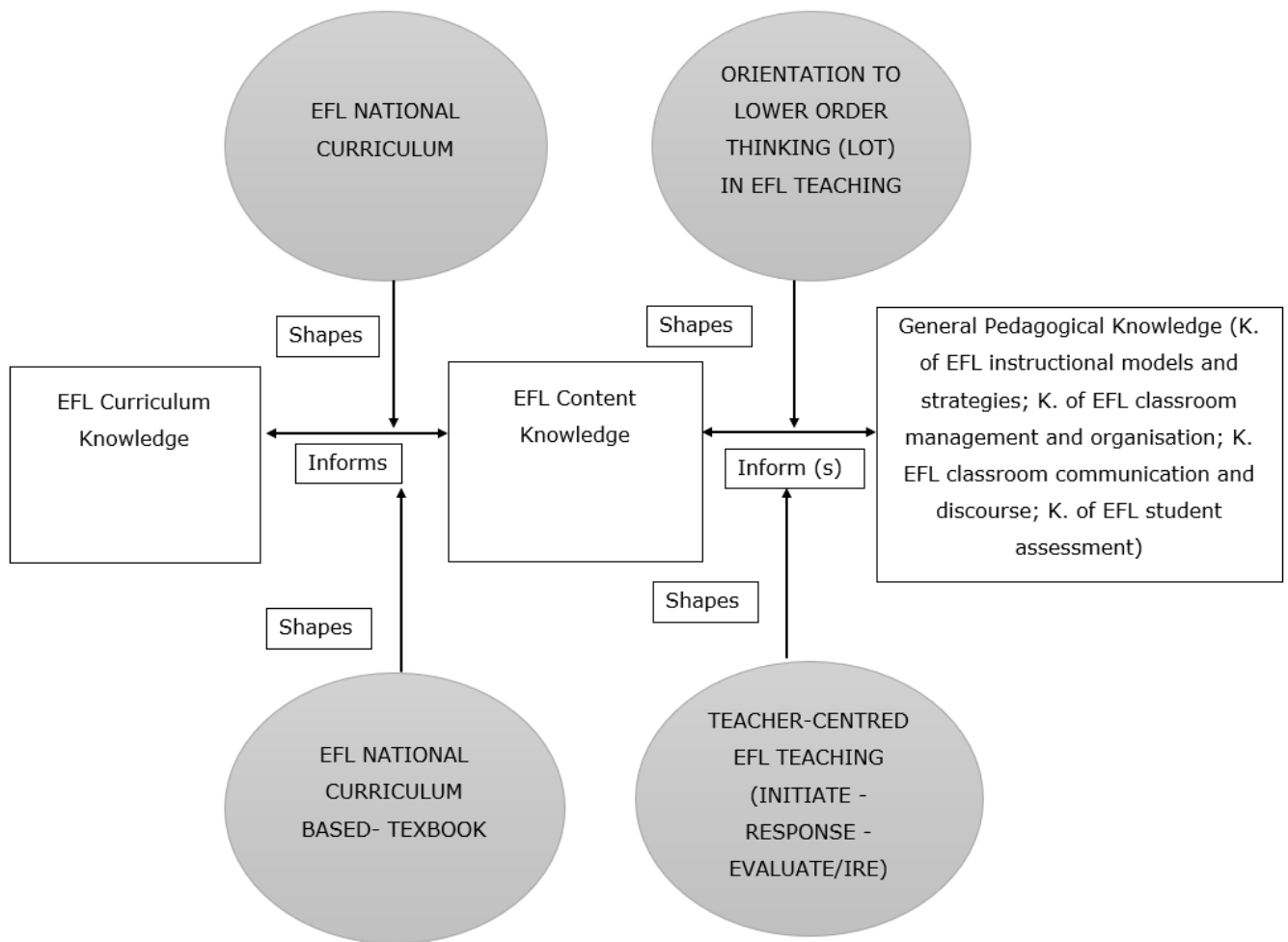
4.5.2 The state of PCK of EFL teachers

This section addresses the research question about the state of rural EFL teachers' PCK before a professional learning intervention (RQ 2). The data reported in this section are drawn from interviews and surveys completed by fifty-two teachers and from five of the fifty-two teachers who volunteered to participate in an intervention.

The survey completed by fifty-two teachers showed they reported that they 'occasionally' considered most of the aspects of the QTF including cultural knowledge (38.5%), inclusivity (67.3%), metalanguage (34.6%), substantive communication (32.7%), student direction (28.8%), deep understanding (36.5%), deep knowledge (32.7%) and students' self-regulation (40.4%). The survey revealed areas of the QTF that these EFL teachers 'rarely' considered in their teaching, such as connectedness (28.8%), student direction (23.1%), deep knowledge (38.5%), and developing HOTS (40.4%). Over a quarter of the surveyed teachers reported never using a range of HOTS questioning techniques in their lessons (26.9%). The detailed frequency analysis can be seen in Appendix 17. Overall, responses from these rural teachers showed that they gave very limited consideration to some important aspects of the QTF in their teaching. Of particular interest for this study is the finding that they gave little consideration to HOTS in their teaching.

Next, the state of EFL teachers' PCK was categorised based on five PCK components. Figure 4.3 depicts a modified model (adapted from the Aydin and Boz (2013) model of PCK integration). It shows influences on teachers' General Pedagogical Knowledge for teaching EFL before they participated in a PLC intervention.

Figure 4.3 Study 1: Pre-intervention teachers' PCK components and classroom practice (adapted from a model by Aydin & Boz, 2013, pp. 620-622)



The model shows that knowledge of the national EFL curriculum informed the content of the teachers' EFL lessons which were based on the prescribed textbook. This indicates that the pedagogical practice of these teachers was shaped by a teacher-centred approach oriented toward teaching LOT.

4.5.2.1 PCK- EFL Content knowledge (PCK-CK)

Content knowledge (CK) refers to teachers' knowledge related to the subject matter they teach (Shulman, 1986,1987) and in this study refers to teachers' knowledge of the EFL content they need to use in order to teach topics in their EFL lessons. The elements in the QTF that facilitate

teachers' exploration of their content knowledge are the elements of deep knowledge (DK) and metalanguage (ML).

Deep Knowledge (DK)

DK reports how teachers understand the central ideas or concepts of a classroom lesson (NSWDET, 2003); it refers to teachers' presentation of information related to the central ideas of a content area, with reasoning and arguments related to the central topics or key concepts of the lesson in a complex and deep way (NSWDET, 2003). Teachers must explain the key concepts of the topics they teach in a clear, reasonable, and meaningful way in order to help students understand a lesson. Petrus showed that he could explain the key concepts of the lesson he gave and explain how they connected to the learning of other concepts in the lesson. He shared:

The main concept of this lesson is about past events in narrative text... the students could explore some elements of language such as past tense or past verb and its relation to students' daily lives. For instance, what were their activities during their holiday yesterday? (Petrus, PRE1)

Petrus understood the content of the lesson, showing that he had a deep knowledge of the subject matter. He considered how the English language is applied in students' daily lives and drew on his knowledge of the EFL curriculum, and to some extent on his knowledge of his learners.

Similarly, Melinda could list the topics of her lesson but could not explain the relationship between different concepts, indicating that her understanding of the content was shallow. Another teacher, Steven, answered the question about the topic of his lesson in a general way and explained briefly some basic sub-topics of the lesson. The pre-intervention interview showed that four of the five teachers (Diana, Steven, Melinda, and Ruben) were not able to explain in a meaningful way the key concepts of their lessons and the relationships between the concepts (see Appendix 20).

Observation data from the classrooms of these five teachers revealed they all showed limited understanding of the content of the topics being taught in their lessons. Their explanations of the topics were superficial and did not help students understand the content of the lesson. This was exemplified by Melinda who sat at her desk and read the definition of report text and short functional text for the students to copy into their notebooks. Document analysis (lesson plans) also showed that the teachers strictly followed textbooks for their lesson content and activities, an approach that did not encourage development of students' knowledge and understanding. The teachers transferred fragmented information to their students, showing their limited understanding of PCK-content knowledge, and students' work samples reflected this.

The purpose of DK is to encourage teachers and students to develop and be able to provide deeper explanation about the central ideas of topics in lessons (NSWDET, 2003). Interview responses showed that the five teachers focused on describing lesson topics from the required curriculum in a superficial way. This was visible in their observed teaching practice where they did not explain the topics' complexity to ensure DK was established.

Metalinguage (ML)

ML refers to teachers' knowledge related to specific grammar or specialised language aspects in the topics they teach (NSWDET, 2003). Analysis of interview responses given by the five teachers showed that they had knowledge related to the grammar and specific vocabularies they taught in their topics (see appendix 20). The interviews showed that teachers varied in their content knowledge related to the subject of EFL, and this may have contributed to variations in their PCK.

Similarly, Ruben, Melinda and Steven included an explanation of the aspect of grammar that they taught when they referred to the latest curricula in Indonesia that are based on thematic teaching and learning.

Ruben said, “yes, for the lesson on instruction, it is because I know that the learning of grammar could not be separated from the whole lesson taught because of thematic teaching and learning” (Ruben, PRE1). In his explanation, Ruben emphasised that teaching language grammar was part of the curriculum requirement and could not be separated from the topic of his lessons. These EFL teachers explained that their content knowledge was informed by the required EFL curriculum that emphasised the teaching of grammar, and this emphasis on grammar or language structure could be seen in their lesson plans.

Observations of lessons showed that some teachers explained some aspects of language structure or grammar in the topics they taught. For example, Petrus and Ruben consistently provided further explanation to their students, while Diana, Melinda and Steven did not provide further explanation related to language aspects of their lessons. Diana mentioned some special terms related to time, but she did not explain them further when she was asked. Melinda explained the use of simple present tense in her lesson on report text, but she did not provide further clarification in another lesson. On the other hand, Steven provided some clarification in his lessons.

The purpose of ML is to encourage more discussion about aspects of language such as text, tenses, and words (NSWDET, 2003). The interview responses of these teachers showed that they focused on grammar and various text genres, which was also observed in their teaching practice.

4.5.2.2 PCK-EFL general pedagogical knowledge (PCK-EFL GenPK)

The category of general pedagogical knowledge helps teachers present their content knowledge to students and makes a crucial contribution to their PCK (Magnusson, Borko, & Krajcik, 1999; Moradkhani et al., 2013; Morine-Dersheimer & Kent, 1999) related to teaching EFL. General pedagogical knowledge consists of knowledge of instructional strategies, classroom management and organisation, classroom communication and

discourse and student assessment (Magnusson, Borko, & Krajcik, 1999; Moradkhani et al., 2013; Morine-Dersheimer & Kent, 1999).

4.5.2.2.1 **Knowledge of instructional strategies for teaching EFL topics**

Higher Order Thinking (HOT)

HOT in teachers' teaching was another element of interest in this study. This element was used to gauge teachers' understanding of HOT (analysing, evaluating, and creating) and to identify how they facilitated their students using HOT through focussing on HOT in EFL lesson design and delivery (NSWDET, 2003). This is important because HOT leads to the development of the skills of critical and creative thinking that have been described as essential for preparing OECD students for 21st century lives (Ananiadou & Claro, 2009). This is also recognised in the Indonesian Government Standard for Basic and Advanced Educational Content Policy Number 21 Year 2016 of the Graduate Standards Competency (Kemendikbud, 2016a).

Analysis of the data showed that the five teachers in both schools had limited understanding of HOT and had little exposure to it. They said they had little understanding of how to teach HOT to their students at the Junior High School level and tended to teach remembering, understanding, and applying in their lessons, all of which draw on lower order thinking (LOT) (Bloom et al., 1956; Krathwohl, 2002; Krathwohl & Anderson, 2010). For example, Petrus explained:

I just read it so my understanding about higher order thinking is how the students do not think about something that is just ordinary. For example, we asked students to make a sentence about an event that took place in the past. Could you make sentences about your activities yesterday and translate them into Indonesian language using past tense. What does the past form of a verb look like? For example, the verb 'go', the past form of 'go' is 'went'. So, they [students] have to think what is the past form of this verb? For example, the regular verb is a bit hard because they need to add '-d' and '-ed' for past form.... Every time we learn about expressing topics in English, we might not

cover HOT, and they don't use higher level thinking. But if we learn about sentence structure, the students use HOT. (Petrus, PRE1)

Petrus showed that his understanding of HOT was lacking; he thought that memorising vocabulary or sentence structure reflected a HOT activity, as shown in Observations of lesson 1 and 2, Petrus taught students about recount text and his lesson plan showed that he was going to ask students to write about a holiday activity (see lesson plan in Appendix 12). He thought that doing this demonstrated HOT, showing that he had a misconception of HOT and did not understand how to integrate HOT into a lesson activity. Diana also had a superficial understanding of HOT and did not include it in her lessons, as observed in her lesson videos. She said, "I think the students' higher order thinking is not maximal yet in the level of Junior High School" (Diana, PRE1). As a consequence, students in both classrooms did not have opportunity to learn about HOT through classroom activities.

Similarly, teachers' interviews and lesson plans revealed that they did not teach many HOT activities, and that they considered teaching HOT to be very complex. They said that their students did not have the capacity to learn using HOT and for this reason they did not include it. Their responses suggested that they did not understand the concept of HOT and did not believe they could include it in their lessons. They also did not understand their learners because they underestimated their abilities to learn HOT. This suggests that they had limited PCK-KLLC, which was reflected in their practice during observations using the QTF. Overall, the interview responses of all the EFL teachers showed that before a PLC intervention they had very limited understanding of HOT and how to teach it (see Appendix 20).

Analysis of the teaching video observations revealed that all five teachers in the study had a teaching orientation toward LOT where they engaged in routine activities that encouraged recalling information, repeating, or

copying teachers' notes from the black board. Another example of the promotion of LOT was when teachers asked for the English translation of words without having any further discussion with students.

All the lesson observation videos showed teachers employing a teacher-centred approach in their EFL teaching and giving students limited opportunities to engage in critical thinking through undertaking learning activities drawing on HOT. With this orientation toward teaching LOT being common to all teachers, it seems that there was a systemic gap in professional learning for teachers to help them integrate HOT and that this influenced their PCK for teaching (or not teaching) HOT in their EFL lessons.

The HOT element in the QTF is meant to encourage students to think critically, solve problems and create new ideas, concepts, or products (NSWDET, 2003). However, the five teachers in Study 1 focused on LOT aspects (remembering, understanding and applying) in their interviews and teaching practice. Other aspects considered in the HOT element of the QTF were not discussed or observed in their lessons.

Student Direction (SD)

SD refers to opportunities given to students to make choices and to be able to negotiate their learning activities, the duration of activities, the phase of activities (stages or steps in the activities) and how they would like to complete them (NSWDET, 2003). Four of the five teachers did not give students the option to choose the types of activities they would complete or the duration and pace of lessons. They did not involve students in deciding the content or criteria for completing and assessing tasks. Melinda commented, "I don't give them freedom often, it is only sometimes" (Melinda, PRE1). Responses from each of the five teachers showed that they had a low level of knowledge in relation to allowing or promoting student direction (see Appendix 20). Instead, they talked

about controlling all activities during lesson planning and delivery, which was borne out by lessons observations.

The interviews and lesson observations indicated that before the PLC intervention the five EFL teachers had limited instructional knowledge about how to provide students with choice in their learning, and through this, promote student direction. Document analysis reflected teachers' domination in their control of learning activities, the duration of activities, the phases of activities (stages or steps in the activities), and how the activities would be completed.

Four of the five teachers did not provide any opportunity for students to negotiate their learning activities or the duration of activities in the classroom. Only one teacher (Petrus) allowed students some choice in their learning; he allowed students to choose the title of their recount text writing.

The purpose of SD is to encourage a student-centred classroom that allows students to take charge and have responsibility over their own learning (NSWDET, 2003). The interview and classroom observations showed that teachers used a teacher-centred approach in their teaching and did not attend to self-direction in a way that would enable students to manage their own learning.

Connectedness (CN)

CN refers to the relevance of students' learning to their daily lives and to how they can share their knowledge beyond the classroom (NSWDET, 2003). Teachers' interview responses showed little consideration of the connectedness of their lessons to students' real lives (see Appendix 20). For example, Petrus described how he made superficial connections to students' lives outside the classroom when he said:

This is my way to share the lesson with the community or other people or with the public, I always say to students for using the word 'good morning', maybe to increase your English ability in

school, you can say 'good morning' not only to your English teacher or to your friends in the class, but also when you are around the school, you should say it to others. So, you indirectly increase your English ability. 'Good morning...good morning.... good morning' and to the people outside the school who don't know English could learn about saying 'good morning' by listening to you.... (Petrus, PRE1)

In his lesson on 'greetings' Petrus gave a very general answer to the question about making connections between his lessons and the outside world. His answer could indicate that he was trying to save face during the interview by not revealing his lack of PCK that would support him in making connection between his lessons and the outside world. Diana also did not explain the aspect of connecting the lesson that she taught to a real-life situation but instead referred to the usefulness of using English outside the class for conversation with visitors, although this is unlikely to happen because there are very few English-speaking westerners who visit the island.

Document analysis and classroom observations also revealed that the teachers were not connecting their lessons to students' lives outside the classroom in a meaningful way. Petrus, Melinda, and Ruben tried to make connections between their lessons and the outside world, but the connection was not substantial, as observed in their teaching. This is similar to observations of lessons conducted by Petrus and Diana.

Overall, the interview findings, lesson observations and lesson plans showed that the five teachers had low instructional knowledge related to principles and strategies that would help them to teach in a way that would connect their EFL topics with the world outside the classroom.

4.5.2.2.2 Knowledge of EFL classroom management and organisation

Knowledge of classroom management refers to teachers' knowledge of how to manage and organise the classroom to ensure effective teaching

and learning. This knowledge covers engagement (EG), social support (SS), students' self-regulation (SSR) and inclusivity (IN).

Engagement (EG)

EG refers to students' active participation during lessons (NSWDET, 2003). The findings from analysis of the interviews with five teachers show that three teachers (Petrus, Diana, and Steven) employed corporal punishment as a way of making their students participate actively in lessons. For example, Diana revealed,

It is a bit of stimulation or a bit of threat for them to do...so they do their task. Because if I don't do it, the students will not do the task. So, I must give them a bit of force. Maybe if they don't want to do the task, their scores will reduce or maybe they will get a pinch or ear pulling. (Diana, PRE1)

This response was typical of the responses given by three of the teachers, showing that they did not use a child-friendly approach to encourage their students to engage actively in lesson activities, but coerced them by telling them that the consequence of not engaging in classroom activities would be that they would gain low scores, and have their ears pulled or pinched. The teachers adopting a coercive approach did not employ other strategies to encourage active engagement. This violent behaviour was accepted in the schools as the norm and mandatory reporting was not in place. It was difficult to observe this corporal punishment and not take any action, because this should not be practised in the classroom at all. Later, this issue was addressed in the meeting with the teachers. It seemed that they did not consider the negative effect of this method on students' active engagement.

Classroom observation showed that the teachers struggled to encourage students' active participation in lessons, and that they had low engagement in class activities as shown by frequent off task and disruptive behaviours during lessons. The students in Steven's class looked bored and appeared to be uninterested in engaging in lesson

activities, which seemed to show that his strategy of grouping students to increase engagement was not effective. Classroom observations revealed that teachers employed direct questioning techniques and drill activities in their efforts to engage students in lesson activities. This teacher-directed approach did not encourage active engagement and observations showed that students were passive and quiet during lessons.

Three teachers (Petrus, Diana and Steven) employed corporal punishment in their teaching as a way of enforcing students' involvement in learning activities, and this could account for why the majority of students were very quiet in these classrooms. The teachers did not show in their teaching that they considered other aspects in the QTF - EG (NSWDET, 2003).

Social Support (SS)

SS refers to the way teachers create a safe classroom environment in which all students can thrive as they learn (NSWDET, 2003). Teachers' interview responses revealed that they employed both positive and negative approaches to managing their classroom environment. For example, Ruben stated, "I observed the students' interaction with their classmates and if there are any students who say rude things, even if I am in the middle of explaining the lesson or busy with something, I will address and attend to it" (Ruben, PRE1). This comment showed that Ruben ensured that students received support to resolve any conflict during lessons.

The interviews and observations showed that Steven and Petrus used negative approaches to supporting their students in the classroom. Petrus was observed to have trouble managing students' behaviour in his class, and he mentioned that he made agreements or learning contracts with students to manage their behaviour. However, these agreements seemed to have negative consequences for students because he used corporal punishment when students were noisy (see Appendix 20).

Two teachers, Melinda and Ruben, showed neutral social support for students in that they did not make negative comments to students in their lessons. Diana was observed to make positive comments only to those who were actively doing lesson tasks. Overall, Diana, Steven and Petrus were struggling to manage students' behaviour and appeared to lack knowledge of positive classroom management techniques involving social support, using corporal punishment as classroom management instead.

The teachers indicated in their interview responses that they understood SS in terms of behaviour management (e.g., not being noisy) without attending to socially supportive learning behaviours. This is different from the purpose of SS, which is not only about managing students' behaviours but is also about encouraging and appreciating students' effort and participation in lessons (NSWDET, 2003).

It seems that corporal punishment in classrooms is an expected and common practice; the Republic of Indonesian Regulation Number 23 Year 2002 about Children's Protection article Number 54 states, "Children within the school environment must be protected from any violent action that is conducted by teachers, school staff or their peers within the school or other education institutions" (Presiden Republik Indonesia, 2014). Although corporal punishment in schools has been forbidden, cultural norms in Indonesian society permit this practice. Although there is a system established for mandatory reporting of violence against children by their teachers and school staff, the enforcement of this system is still weak.

Students' Self-Regulation of behaviour (SSR)

SSR refers to students' ability to regulate their behaviours themselves during their learning in lessons so the learning can continue without disruptions (NSWDET, 2003). The teachers struggled to maintain order in their classrooms and did not know how to help students learn how to

regulate themselves. For example, Petrus mentioned having a learning contract with his students, however, his learning contract was a regulation and punishment regime. If the students were too noisy and did not discipline themselves, they would get ear pulling and a warning where the teacher called out their names. There was a lack of attention to teaching students how to self-regulate their own behaviour in his classroom; instead Petrus managed students' behaviour most of the time.

Likewise, Steven and Melinda spent a substantial amount of time regulating students' behaviour with the justification that many students in their classrooms had low behavioural self-regulation that could be employed during learning activities. This was shown in Steven's comment:

There are two ways that I use in order to discipline the students.... So, if there are any students who make disturbance, we can prevent it by pulling their ears.... Particularly, in this school, there are two ways to warn the students: using a tough way or a soft way such as praises in order to make the students follow the rules in the classroom. (Steven, PRE1)

Steven revealed a punitive approach to students' misbehaviour in the classroom and expected students to fix their eyes on the front of the classroom or the teacher, and not turn their attention to the left or right. These comments reveal that these EFL teachers had limited knowledge about promoting students' self-regulation and took on the job of managing students' off task behaviours most of the time during lessons.

Overall, the time spent managing student misbehaviour meant they spent little time teaching students how to self-regulate or manage their own behaviour. Classroom observations showed that many of the students did not pay attention to their lessons even though teachers clearly spent a substantial amount of time trying to enforce their attention; students showed little evidence of self-regulating their own behaviour.

The purpose of the SSR element is to help students not only regulate their own behaviours but to demonstrate autonomy or initiative for their learning behaviours (NSWDET, 2003). However, teachers' interviews and classroom observations showed that they focused on disciplining students and other aspects considered in the SSR aspect in the QTF were not attended to.

Inclusivity (IN)

IN refers to teachers' efforts to prepare learning activities that are appropriate for students' abilities and that encourage active participation by all students during lessons despite their cultural or social background (NSWDET, 2003). To plan for inclusion, teachers need to be mindful of each student's level of ability and background so they can plan to involve all students actively in their own learning (Gale, Mills, & Cross, 2017).

High inclusivity is evident when all students in the classroom, from all cultural or social backgrounds, participate in the public work of the class and when their contributions are taken seriously and valued. High inclusivity is evident when the classroom is free from negative forms of prejudice and discrimination, and thus all individuals, regardless of their social grouping, feel encouraged to participate fully in the lesson. (NSWDET, 2003, p. 46)

Melinda expressed a more inclusive view when she explained that she considered students' backgrounds were relevant and important and needed to be taken into consideration in the teaching and learning process. She revealed that students might come from different economic and family situations, such as coming from a troubled family where they were neglected by their parents psychologically. She said she tried to involve all students in learning activities, and that if some could not cope, she asked them to meet her in person for further help. Melinda said that despite her efforts to include all students in classroom learning, some students might exclude themselves because they felt incapable academically or they came from a disadvantaged family or lacked support from their parents. Steven and Ruben also expressed this view. Steven

added that he did not include students with low reading skills in classroom tasks, and that he omitted challenging tasks because he did not believe his students had the ability to do them.

The findings reported here reveal that these EFL teachers did not provide activities to encourage the inclusion of all students (see Appendix 20). Three teachers (Steven, Ruben and Melinda) expressed the belief that some students excluded themselves and for this reason they did not act inclusively to employ strategies that would encourage the participation of these students in learning that was appropriate for them. Observations showed that there was low inclusivity because the teachers did not provide opportunities to engage all students in lessons but instead made some sit in the classroom without being included. The teachers did not show that they prepared appropriate learning activities that would cater to students' varying levels of abilities and backgrounds.

The purpose of IN is to encourage full participation of all students in learning activities, regardless of their backgrounds and levels of academic ability (NSWDET, 2003). The interview responses showed that the teachers had very limited focus on inclusion and there was little evidence of inclusion in lesson observations. There was no evidence to show that they attended to varying learning activities to cater to different academic abilities.

4.5.2.2.3 Knowledge of EFL classroom communication and discourse

Knowledge of EFL classroom communication and discourse refers to teachers' ability to communicate well with students and provide opportunities for them to express themselves in their learning, so they are able to meet learning objectives.

Substantive Communication (SC)

SC refers to the way teachers manage students and encourage them to share their views and ideas during lessons (NSWDET, 2003). In her

interview Diana said, "The way to encourage the children is to involve them one by one. They are placed in a group and each child in the group is obligated to answer a question" (Diana, PRE1). She described using small groups where students were encouraged to answer questions; she said she did this because most of the students were quite shy about speaking in front of the class.

Teachers mostly described the IRE interaction style in their classroom communication (see Appendix 20) and this was observed in their lessons. For example, when Steven described translating word by word for his students due to their low English proficiency, he explained that he encouraged students to share their work and said that he used positive words or praise to correct their mistakes, which is an IRE classroom interaction. Observations showed that the teachers had limited knowledge of how to help students communicate and share their views on learning during lessons and used only routine classroom communication methods that did not encourage students to engage in sustained English language conversation.

In addition to using the Initiate-Response-Evaluation/IRE pattern where teachers asked questions, students answered then teachers responded, the teachers usually employed Indonesian language in their teaching and it was observed that students answered using Indonesian language. Steven encouraged students to try to guess what was in his head, as shown by him expecting students to continue whatever he said after he mentioned it to them. He explained that he did this so students would be willing to share their work, however observation of his classroom practice revealed that he used harsh and negative words as well as corporal punishment in his interactions. This is likely to have discouraged substantive communication in his classroom.

The purpose of SC is to encourage sustained communication about the content of classroom lessons (NSWDET, 2003). The teachers showed that

they focused on routine interactions in their interviews and used Initiate-Response-Evaluation/IRE interactions in their observed teaching practices; there was no evidence that other aspects of communication such as sustained interaction, a focus on the substance of lessons, and reciprocal interactions were considered.

High Expectations (HE)

HE refers to teachers' ability to clearly communicate their expectations about the quality of students' learning (NSWDET, 2003). Melinda described using positive encouragement and said she explained to students the importance of studying English and how it could help them to be successful in their studies:

By giving them encouragement saying remember you have to study, so you can be successful students not only in English lessons but also in other subjects. The way to give rewards is by saying thank you to them for their attention and time. Even though they still walk in and out and play during the lesson like what you see. But if we say positive sentences, they will feel that teachers care about their presence, even though there is no attention or whatever, when we say thank you to them, they will feel the attention by the teacher. (Melinda, PRE1)

Melinda clearly stated her expectations for students' classroom behaviour and used positive sentences to show students that she cared about them. However, her comments were related to classroom behaviour rather than to expectations for their academic performance. The other teachers did not have high expectations related to students' knowledge and skills and said they did not expect them to participate in challenging classroom activities (see Appendix 20). Overall, observations showed that the teachers used a lecturing approach to their teaching and used learning tasks that required routine responses such as rote learning and drills. They did not clearly communicate their expectations related to the quality of student learning.

HE is related to teachers encouraging students to take risks in their learning and challenging them to develop their knowledge and skills

(NSWDET, 2003). Interview responses and classroom observations showed that teachers placed little focus on encouraging students to take risks and did not provide them with challenging tasks in their learning.

Narrative (N)

The element of narrative refers to teachers using stories related to the lesson content to help students better understand the concepts covered in the lesson (NSWDET, 2003). Diana explained that she did not use narrative in her lessons but used a teacher-centred lecturing approach. She shared:

For example, I explain about the way to read the clock, time in English. So, in English there are six types of activity that are six parts about time. The first part is 60 minutes called 'O'clock', then half is 'quarter', then 'pass' for more minutes, and then 'to' for fewer minutes. After that, there is what you call a quarter to and a quarter past. (Diana, PRE1)

Similarly, Steven, Ruben and Melinda described using a mostly explanatory teaching method, with Ruben saying:

Generally, I come from a perspective that the students must be equipped with many vocabularies. It relates to when I read the words and explain the meaning of the words. So, I ask them to pay attention to my explanation, then they look for the meaning in the dictionary, and then try to write the word. So, they could memorise it, because I think it is easier for them to understand the translation of the words since we are not living in a community who speak English daily. (Ruben, PRE1)

Ruben went on to explain that he mostly used an explanatory teaching method in which his students were expected to listen and follow his instructions throughout a lesson. He said that some students struggled because they had low English proficiency, and commented that he did not know how to help them move toward more meaningful learning.

Steven was observed to use narrative when he used brainstorming to introduce a new topic. However, like the other teachers, he otherwise used a teacher-centred approach where students were expected to listen

and follow instructions throughout his lesson. The teachers all commented that some students struggled due to having low English proficiency and said that this resulted in them struggling to know how to help them achieve meaningful learning (see Appendix 20).

The findings from the teacher interviews revealed that the teachers mostly employed a lecturing or teacher-directed style of teaching that involved one-way communication from teacher to students. The students were expected to be quiet and to listen to the teacher's explanation for most of the lesson. The teachers used limited classroom communication and discourse knowledge, and mostly employed teacher talk rather than using narrative to help students understand the ideas involved in their lessons. Observation data showed that only one teacher, Petrus, used narrative to explain experiences in his lessons.

Narratives are meant to help students understand the content of a lesson through using stories (NSWDET, 2003). The teachers did not show that they knew how to use stories to involve students in their learning.

4.5.2.2.4 **Knowledge of EFL student assessment**

Knowledge of EFL student assessment refers to teachers' knowledge of how to assess learners using explicit criteria.

Explicit Quality Criteria (EQC)

EQC refers to teachers' knowledge of assessment and how they use it to design quality criteria for learning tasks given to students in their classrooms (NSWDET, 2003). Providing students with task criteria can assist them to understand the quality of work EFL teachers expect. Diana described giving students technical and procedural criteria for learning tasks. When asked about the same issue, Petrus responded by saying, "in the lesson plan it is written, there are criteria, evaluation rubric, there are elements of pronunciation, methods of delivery, performance, and teaching aids. However, I do not explain to them orally. No, I do not give them" (Petrus, PRE1). Here Petrus talked about checking students' work,

but from his explanation it was clear that he did not discuss the criteria with his students.

Teachers' interview responses (see Appendix 20) were supported by classroom observation data that did not show any evidence of the teachers providing students with explicit quality criteria for their learning. The teachers did not discuss task criteria with students and relied on textbook tasks in their lessons. The purpose of EQC is to help students understand the specific requirements of learning tasks so they can check the quality of their work (NSWDET, 2003). Teachers' interviews and observations of their lessons did not show any examples of teachers providing criteria that considered EQC.

4.5.2.3. PCK-EFL curriculum knowledge (PCK-CurrK)

PCK-EFL CurrK knowledge relates to teachers' knowledge of the EFL curriculum in Indonesia and their understanding of the syllabus and the topics that need to be taught in lessons. Having a good understanding of the learning goals and objectives listed in the syllabus of a country's required curriculum is necessary because it is the basis for planning meaningful lessons.

Knowledge Integration (KI)

One aspect of teachers' PCK is their knowledge of curriculum and the educational purposes of EFL teaching and learning. "High knowledge integration is identifiable when meaningful connections are made between different topics and/or between different subjects" (NSWDET, 2003, p.44). In the interviews there was some discussion about teachers integrating different sub-topics into their lessons and connecting them to topics in the required curriculum (see Appendix 20).

Melinda indicated some recognition of the connections within a topic as can be seen in the excerpt from her interview:

For example, the topic is on report text. The report text describes about an event or phenomenon that happens around us. So, report text covers other subtopics, such as disaster or natural disaster. When it mentions natural phenomenon, it refers to texts that report about natural disasters, earthquakes, landslides, tsunami and others. (Melinda, PRE1)

Melinda's interview response did not clarify whether she knew how to integrate knowledge of different aspects of natural phenomena in her teaching. Steven and Ruben did not make connections between concepts in their lessons.

Observation data revealed that the teachers did not make meaningful connections to other topics or subjects in their lessons; lessons were limited to one topic only. Ruben made a connection in a topic on Zebra crossings, but it was not significant: "I taught about warnings or commands and related it to people walking in the Zebra crossing, the students from the villages don't know or never see Zebra crossing. Then I tell them that the purpose of Zebra crossing is for crossing the road" (Ruben, PRE1). Classroom observations showed that the small connection made was not explored further.

The teachers demonstrated that they had limited knowledge of the official curriculum requirements pertaining to knowledge integration. This could be due to the curriculum being new. They did not show evidence of knowledge integration in their teaching practice, where it might be expected that they would make connections between different subject matter knowledge. KI aims to ensure that teachers present meaningful connections between topics across the curriculum (NSWDET, 2003). The teachers interviewed and observed focused on superficial connections only within EFL curriculum topics.

4.5.2.4 PCK-Knowledge of EFL learners and their characteristics (PCK-KLLC)

PCK-KLLC refers to teachers' ability to integrate their knowledge of their learners which helps them teach effectively as they aim to meet their learning goals.

4.5.2.4.1 Knowledge of EFL students' understanding

Problematic Knowledge (PK)

PK refers to teachers' knowledge of how to encourage students to question the knowledge covered in lessons and how they can share their understanding of lesson content and perspectives with others in the classroom (NSWDET, 2003). Interview responses showed that teachers' lecturing style did not encourage or provide opportunities for students to share different perspectives with each other. Students were expected to be quiet and receive information in lessons, an approach that would not encourage them to think critically about information presented (see Appendix 20).

For example, Melinda, Ruben, and Steven explained that they gave students the opportunity to answer questions they had prepared for them, but the questions were only for clarification of an assignment or related to doing a task. They did not use questions that problematised lesson ideas or related to different perspectives on the content. This indicated that they regarded the information being presented as static or fixed and having only one interpretation. Steven said:

I give them time to answer the questions that I have given to them. Then, they answer... If their answer is wrong, then as their teacher I will correct their answer to help the students understand the lesson goal. (Steven, PRE1)

Steven said that he corrected students' answers if they were wrong according to his interpretation, indicating that he had a didactic approach to teaching where he did not acknowledge that there could be multiple perspectives on ideas. This approach can be seen to reflect the culture of

Indonesian society where younger members of the culture are expected to listen and not question information given to them; they are expected to behave well by listening to what teachers say and not questioning them. This cultural norm discourages teachers and students from problematising or questioning knowledge encountered in classrooms and it is likely that a great deal of time and effort would be required to change the behaviour of teachers and students in this regard.

PK is supposed to encourage students to present and evaluate different perspectives related to the topic of lessons (NSWDET, 2003). Interviews and observations showed that these teachers focused on facts and did not consider other aspects relating to critical thinking. It is important to note that problematising knowledge is necessary if students are to employ HOT.

Background Knowledge (BK)

The element of BK relates to the way teachers employ students' background knowledge in their lessons to help them see the relevance of lesson content (NSWDET, 2003). Some teachers said they made connections between lessons and students' lives and experiences. For example, Diana stated:

Maybe by sharing stories, there is students' experience that has a connection to the lesson. I retell something that is connected to the lesson, maybe I can ask students' experiences and then I can connect it into the lesson, if the experiences are connected to what I will explain... Is it the lesson on time? For example, if they are at home and what time they wake up in the morning? That is their experience at home. (Diana, PRE1)

Although Diana spoke about considering students' experiences and the way they might have connections to the lesson, she did not explain how the connection might be relevant to the lesson topic. The interview responses of four of the five teachers indicated that they had limited knowledge about how to integrate students' background knowledge into their lessons (see Appendix 20). Only one teacher, Petrus, asked students

about their background knowledge in terms of asking about their experiences during a holiday.

BK is meant to help students understand the relevance of lessons to their lives (NSWDET, 2003). Interviews and lesson observations showed that four of the five teachers focussed on the topic of their lesson without making connections to students' background knowledge. Connecting new knowledge in a meaningful way to students' experiences is an important first step to stimulating their thinking.

Deep Understanding (DU)

The element of DU refers to facilitating students' development of their understanding of the content presented in lessons by being able to explore and critically evaluate the relationships between concepts so that they are able to use the knowledge to draw conclusions and solve problems (NSWDET, 2003). Some teachers, such as Diana, employed approaches that elicited information from students using LOT questions. She explained in her interview that she evaluated students' understanding in lessons by asking them if they had understood the content and then asking them to re-explain it. This showed that she used remembering and recalling (LOT) and analysing to judge students' understanding (see Appendix 20).

Melinda stated that she used assessment in order to evaluate students' understanding and explained that she asked students to do tasks such as making greeting cards so that she could assess their understanding of the lesson. She said:

Through doing assessment...For example, in written form, I ask the students to rewrite what they have understood from my explanation. For example, greeting cards, how they use greeting cards to congratulate someone for their success and so on. They have done it even though it is not perfect yet and not exactly like what I want and give them. (Melinda, PRE1)

Melinda revealed that she had limited knowledge about developing students' deep understanding.

All of the teachers used teacher-directed teaching methods which did not promote deep understanding. The teachers commented that students had low levels of English proficiency and said this was the reason that they did not describe giving students any support to help them develop deep understanding that would be needed to critically assess and use lesson content to solve problems (HOT). The observation data confirmed that the teachers mentioned some main concepts but did not go further by having students use their knowledge to solve problems.

4.5.2.5 PCK-Knowledge of EFL educational contexts and cultures (PCK-KECC)

PCK-KECC refers to teachers' ability to integrate students' context and culture into their teaching to help students meet learning goals.

Cultural Knowledge (CulK)

CulK relates to teachers considering students' context and culture when designing and teaching lessons (NSWDET, 2003). Diana admitted that she did not consider any aspects of cultural knowledge in her lessons: "all this time I never incorporate the cultural aspect into my lessons" (Diana, PRE1). Four of the five teachers did not mention using cultural knowledge to help students understand lessons. Although Petrus mentioned some cultural artefacts in his lesson, he did not explore this idea. Only Melinda mentioned using any cultural or contextual factors in her interview but there was no cultural connection in her lesson planning and teaching (see Appendix 20). Observations showed that the other four teachers rarely gave students opportunities to relate their learning to their culture or context.

CulK is meant to encourage considerations of diverse cultural knowledge into lessons (NSWDET, 2003). Interviews and lesson observations showed

that teachers mostly focused on lesson content without considering cultural aspects.

4.5.3 **The beliefs, attitudes and practices of EFL teachers in relation to promoting HOT**

This section addresses research question (RQ 3) about the beliefs, attitudes and practices of EFL teachers in relation to promoting HOT in their lessons in rural schools in Eastern Indonesia.

One sub-scale of the survey completed by 52 teachers assessed each teacher's responsibility for student learning, which referred to their sense of having common goals in their efforts to enhance collectively the quality of student learning experiences in their schools (Louis et al., 1996).

Analysis of the sub-scale measuring **teacher responsibility for students' learning** showed that the large group of EFL teachers had some level of agreement (slightly agreed, 40.4%; agreed, 32.7%) that they had been successful in providing the education they wanted for students. Just over half of them agreed (slightly agreed or strongly agreed, 63.5%) that they took most of the responsibility for students who did not meet expected learning outcomes. As a group, the 52 teachers agreed (53.8%) or strongly agreed (25.0%) that there was recognition for academic success or failure in their schools. Over half of the EFL teachers indicated that they felt that they were responsible for all students in their schools (71.2%) and they did not consider that it was a waste of their time and energy to do their best as teachers (73.1%). They expressed the belief that they were certain (90.4%) that they were making a difference in their students' lives. They indicated 100% agreement that they took responsibility for maintaining discipline in the entire school, although they reported that there were some behavioural problems in their schools which affected their teaching (67.3%), and that these issues reduced students' academic success (55.7%). More than a third of teachers (42.3%) agreed that many of their students were not capable of learning the material taught and half agreed to strongly agreed

(50%) that their success or failure in teaching was due primarily to factors beyond their control (See Appendix 17).

These results indicated that although teachers expressed a high sense of responsibility for their students' learning, they felt that factors out of their control influenced students' learning.

Interview data with the smaller sub-group of five teachers showed that they held the belief that their students were not capable of learning HOT because it was too complex for them. Diana shared:

.... In the level of Junior High Schools, I think the students' HOT is not maximal.... I think the learning does not reach the HOT skills yet because the students are not able to create, in this particular case we are learning about time, they are not capable to do HOT activities. (Diana, PRE1)

Steven also stated:

.... If we want to learn HOT in the High School level, it may be more complex with more difficult sentences or words that need to be defined or translated with more complex language...the students in the primary school in this remote area do not get to learn any English lessons previously. Secondly, in remote and further regions like in the villages, there is no informal school for English learning and others. So, the students are truly language beginners. Teachers must start from a very simple topic and then move on to the next level. Sometimes if I see the topic is too complex for the students, I will skip it. It doesn't mean that I ignore it but is due to our limited time during the lesson. (Steven, PRE1)

The belief that students had little prior knowledge of English or low English proficiency levels seemed to lead teachers to believe that they could not employ HOT as they learnt English. Students' lack of prior English language knowledge added to the challenges that teachers had to overcome if they were to teach HOT in EFL lessons in these rural schools. Steven's comment showed that students had the added disadvantage of not having access to any English lessons during their primary schooling, resulting in them being beginning learners of the English language at

secondary school. Teachers' beliefs about students' limited abilities and limited exposure to the English language played a part in influencing their decisions about concentrating on LOT and omitting HOT from their teaching. This lack of attention to HOT was noted in lesson observations.

Teachers described how being in rural schools restricted their ability to meet the objectives of the curriculum and explained that these rural students were limited in being able to understand lessons because they came from economically disadvantaged backgrounds. In real terms, this meant that some students were not able to afford the most basic supplies such as an English dictionary to be used during English lessons. As Steven explained "... sometimes because of their family's economic limitation, they don't have any dictionary too" (Steven, PRE1). Melinda also referred to limited resources in this rural area by saying "...for example, over here if we want to discuss about a widely known topic, we are limited by the lack of references that we have in the school" (Melinda, PRE1). The lack of school resources to help students achieve the requirements of the national curriculum was compounded by students' inability to afford supporting resources. Both factors impacted negatively on teachers' EFL teaching in relation to teaching HOT.

Another issue related to the contradictions that were apparent between the teachers' lesson plans and the lessons observed. This was shown in Melinda's lesson plan on 'reporting and procedural text' which had learning goals that were different from the lesson taught and observed. Petrus also provided lesson plans that did not match the lessons observed. One of his lesson plans outlined reading a recount text about 'The Kidnappers' where students were required to answer questions based on the text. This learning activity was not observed in the lesson he taught. When asked about this in his interview, he acknowledged the difference between this lesson plan and the lesson observed by saying:

This lesson that I design is about past experience or past event. I designed the lesson plan with one of my fellow English teachers, but the lesson plan might not be similar with the actual lesson that I taught in the class..... The lesson plans have to be submitted on time, but I don't have time, I have to make the syllabus and lesson plans. Also, I have another responsibility to teach a different lesson which is a Counselling and Guidance lesson. So, I have to make two different lesson plans for both subjects (English lesson and Counselling and Guidance lesson) and the time is limited to do these tasks in order to be able to submit lesson plans on time. Therefore, it doesn't matter whether the lesson plan is good or not I have to submit it, then the headmaster told me to request the English lesson plan from my fellow English teacher and I copy it to be used.... (Petrus, PRE1)

These comments by Petrus reveal that although he carefully planned the content of his lessons, competing priorities meant that he took another teacher's lesson plan and used it in his class. It was observed that the taught lesson was based on the prescribed curriculum and the curriculum-based textbook and had not been adjusted to suit the needs of the students in Petrus' class.

Figure 4.4 shows a lesson task planned by Diana that was based on the prescribed textbook of the national curriculum. The task required students to classify words into different groups based on physical appearance.

Figure 4.4 Students' work sample from Diana's lesson on physical appearance

KELOMPOK 4

TUGAS BAHASA INGGRIS

Face	Body (build)	age	Hair/head
• Round	short	young	bald
• oval	tall	old	curly
• pale	fat	middle aged	straight
	thin	late	wavy
	slim		blonde
	skinny		
	medium height		

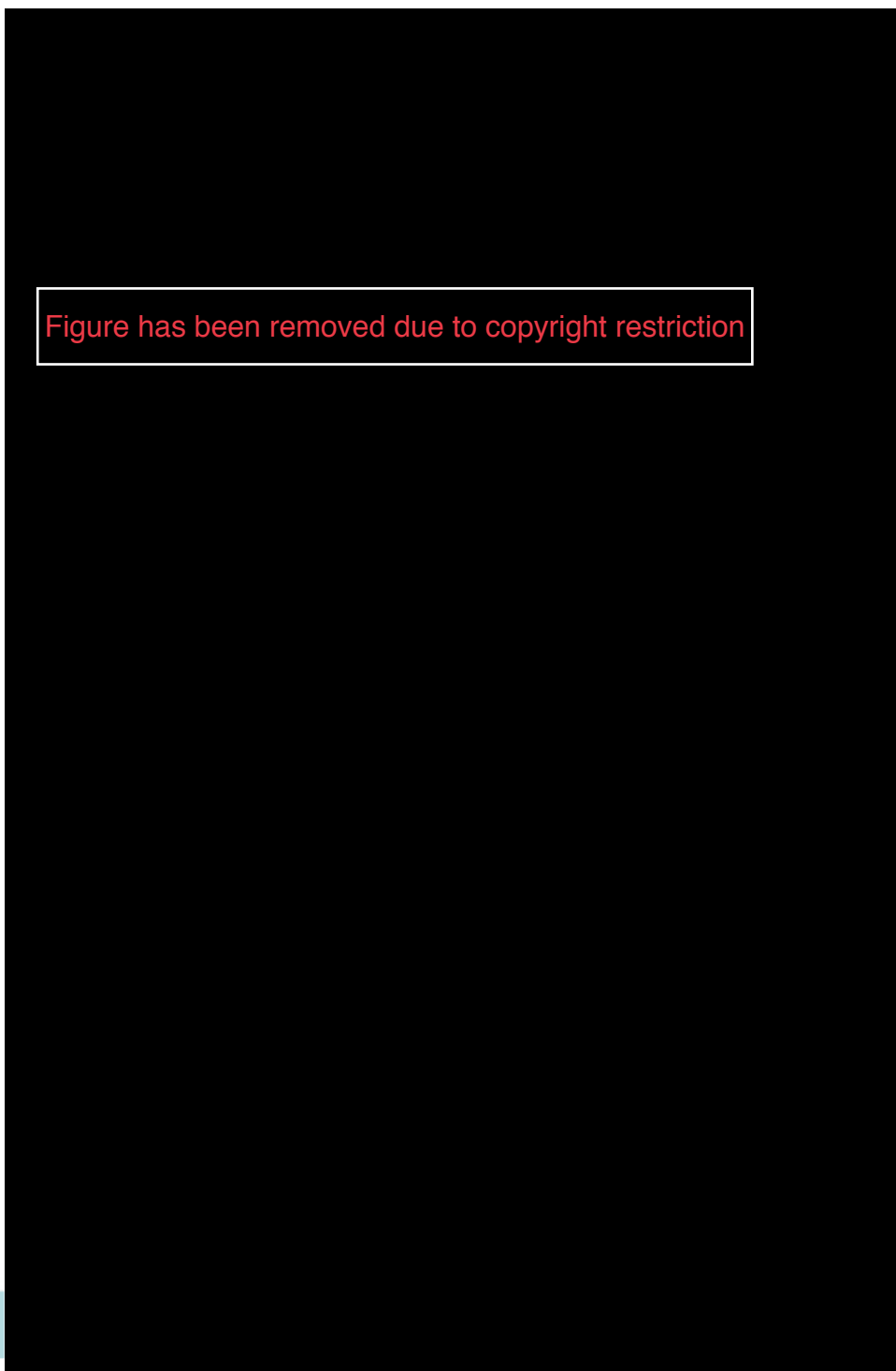
complexion	
white	
dark	

The task above encouraged students to remember words and did not include any HOT. This kind of task was typical of those in all teachers' lesson plans. In Diana's second lesson about 'time' she gave students a task from the textbook that required them to write the time and activity shown for each character in the pictures. Figures 4.5 and 4.6 show the textbook tasks students were required to complete.

Figure 4.5 Textbook task in the lesson on 'Time' (Kemendikbud, 2014a, p. 42)

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Figure 4.6 Textbook task in the lesson on 'Time' (Kemendikbud, 2014a, p. 43)



It can be seen that the textbook tasks shown above gave students the opportunity to understand and recall information (LOT) about activities done by Edo and to re-write them using information from the textbook.

Petrus gave students a task from the textbook in which they needed to write down sentences related to their 'past experience', as shown in a work sample from one student in Table 4.15.

Table 4.15 Students' work sample on 'recount text'

Number	Students' work	Correct
1		Yes
2		No
3		No
4		No
5		No
6		No
7		No

Students' written responses to the task in Petrus' lesson showed that they were mostly unsure about how to write their story in the past tense. If the teacher had designed the task himself, he may have been able to support students to create a story where they used past tense accurately. The textbook task did not allow for creativity but focused on LOT where students needed to translate fragmented sentences word for word.

Ruben gave students the textbook task related to giving instructions in which they needed to match pictures about warnings and commands. Figure 4.7 shows students' work samples in response to this textbook task.

Figure 4.7 A student's work sample for the lesson on 'giving instructions – warnings and commands'

Match the warnings and commands to the picture!

Stop. Police.
Watch out for the ball.
Don't step on the truck.

Please put your seat belt on.
Look out.
Sit down and be quiet.



1. Look Out



2. Sit down and be quiet



3. Please put your seat belt on



4. don't step on the truck



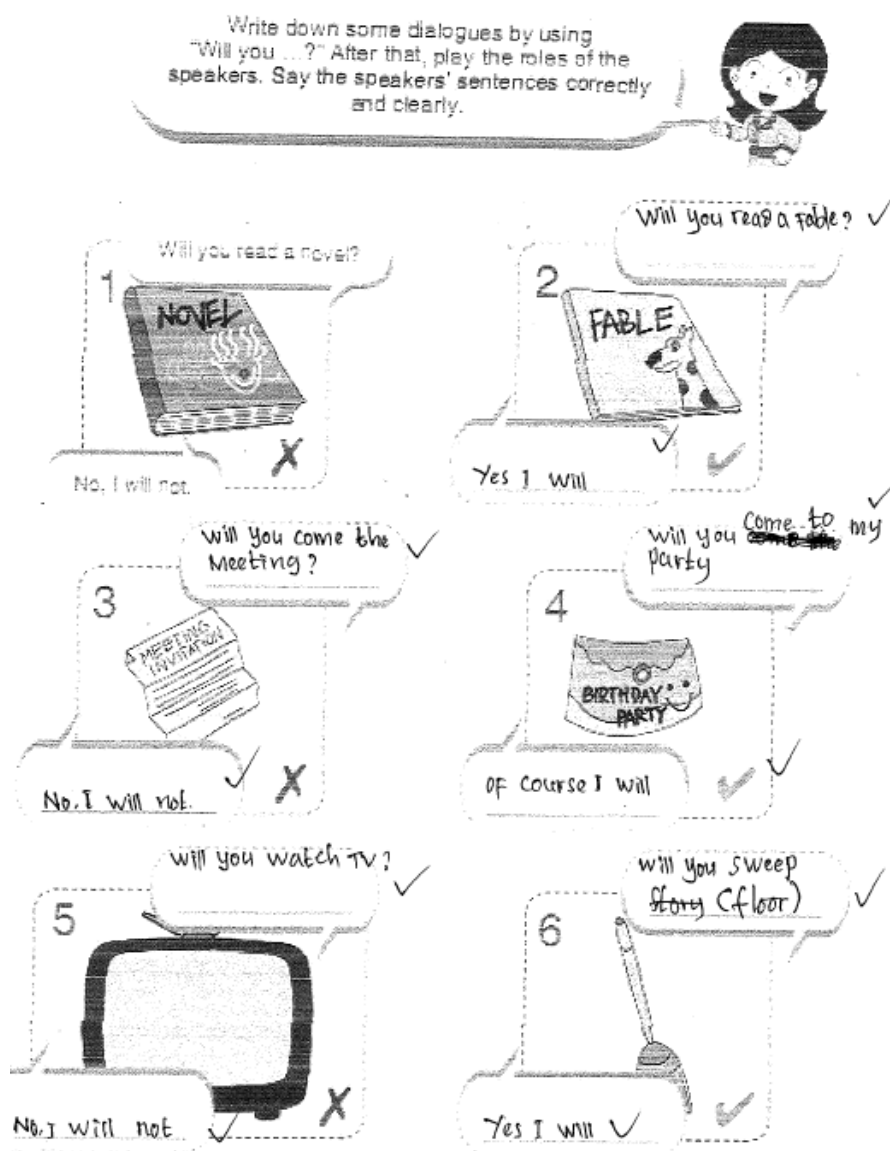
5. Watch out for the ball



6. Stop Police

In the second lesson in Ruben’s classroom about ‘the usage of the expression ‘will’’ students were given the textbook task of writing down questions and answers using the expression ‘will’ based on pictures provided as shown in Figure 4.8.

Figure 4.8 A student’s work sample for lesson ‘expression of will’



This textbook task required students to identify, recall words, understand pictures and apply knowledge by writing sentences and answers, all of which are examples of LOT.

Steven planned a lesson about 'time' that came from the textbook chapter on 'What time is it?'. Students were asked to answer questions orally in response to a picture of a clock drawn on the whiteboard. They then engaged in LOT activities where they were asked to observe the time drawn by the teacher and then answer the teacher's question about what time it was. Figures 4.9 and 4.10 show the 'telling the time' activity from the textbook and the task students were required to complete.

Figure 4.9 Lesson activity 'What time is it?' in Steven's lessons (Kemendikbud, 2014a, p.38)

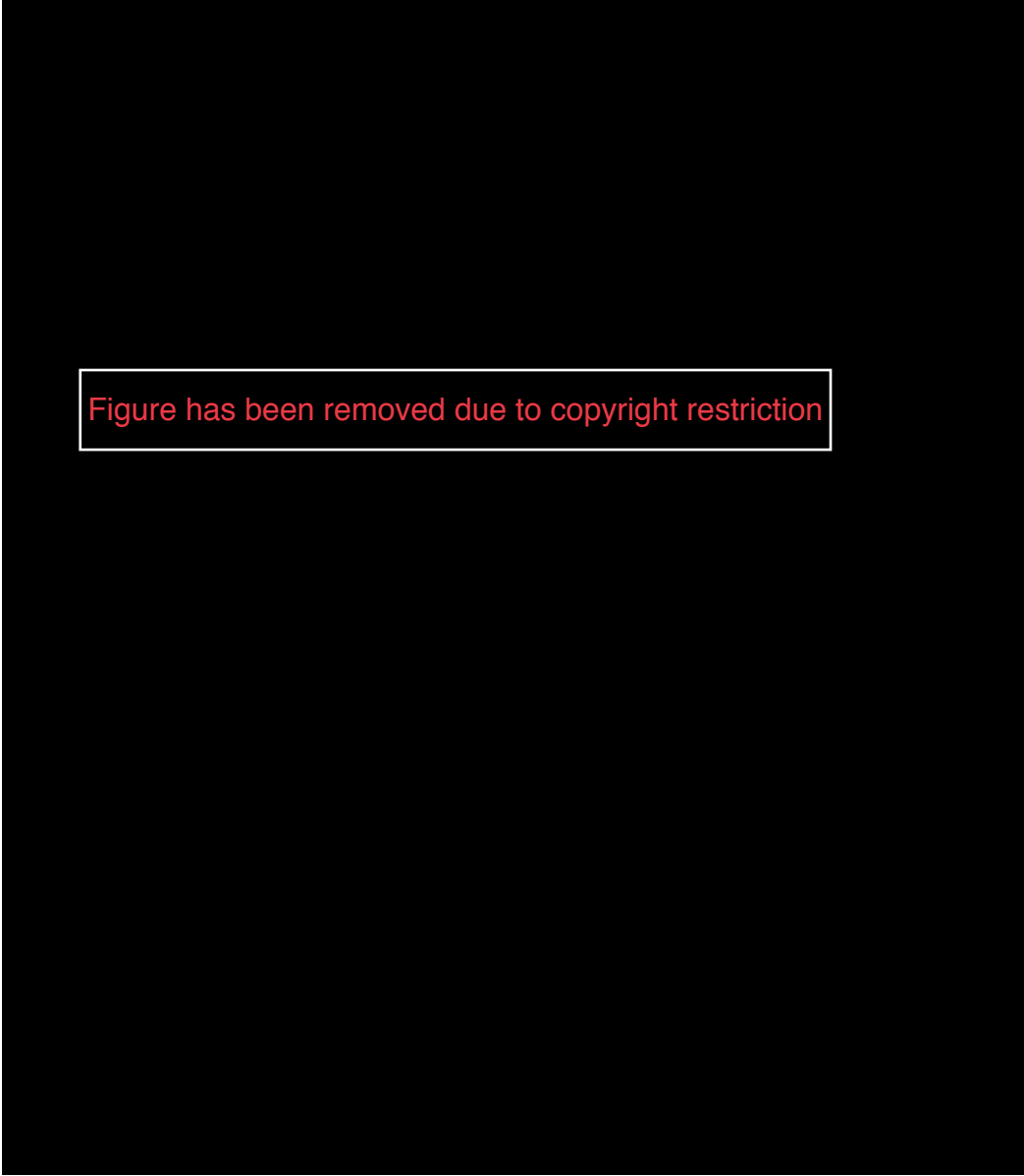


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Figure 4.10 Lesson activity 'What time is it?' in Stevens' lessons (Kemendikbud, 2014a, p.39)

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It can be seen that Steven's lessons on 'time' from the EFL textbook provided opportunities for students to memorise, understand and recall information about numbers (LOT). His use of textbook activities could

indicate that Steven lacked knowledge and understanding of HOT and how to teach it.

The document analysis showed that teachers employed textbook activities in their teaching. These activities encouraged mostly LOT such as remembering, understanding and applying. The teachers focused on completing the required syllabus based on the national curriculum even though they felt a high sense of responsibility for students' learning. The learning activities they chose suggested that they had low expectations for students' learning capabilities. This finding is similar to the survey findings where teachers indicated that they gave little consideration to aspects of the QTF and HOT in their practice, and it suggests that there is a need to increase teachers' PCK for teaching HOT in their EFL lessons. These findings provided information that was used to design a PLC intervention focused on improving EFL teachers' PCK related to developing HOT through their teaching (see Study 2).

4.5.4 The PCK needs of EFL teachers

This section addresses research question (RQ 4) about the PCK needs of EFL teachers in rural schools.

Study 1 identified several areas of teachers' PCK needs as the focus of the PLC intervention:

- (1) To develop a sound understanding of HOT concepts in the curriculum.
- (2) To prepare and develop lesson plans with teaching strategies that encourage critical and creative thinking through HOT instruction in EFL lessons as required by 2013 EFL curriculum.
- (3) To re-design or modify textbook activities or design learning activities to promote HOT and employ resources that are available in the local area of each school.

- (4) To provide teachers with opportunities to discuss teaching strategies and reflect on their teaching to promote meaningful communication in their classroom interactions.
- (5) To assist teachers to apply effective classroom management strategies and help students self-regulate their behaviour.
- (6) To develop detailed task criteria for the assessment of HOT in their lesson planning.
- (7) To explicitly consider and include their knowledge of learners and their backgrounds as a way of encouraging students' engagement in EFL learning.
- (8) To include activities in lessons that are relevant to students' local context and culture.

4.6 Discussion

The preceding section has reported the findings from this study focussing on EFL teachers' existing PCK and their PCK needs related to teaching HOT. It was found that teachers spent limited time on their professional learning and their PCK was composed of knowledge of the EFL curriculum (PCK-CurrK), which informed their EFL content knowledge (PCK-CK). This shaped their general pedagogical knowledge (PCK-GenPK) for teaching EFL, which was shown to rely on activities from prescribed EFL textbooks. The teachers were shown to have had limited knowledge of HOT and to hold the belief that due to their students having low EFL proficiency they would not be able to learn HOT. It was observed that they focused on LOT in their teaching. Moreover, they did not integrate into their teaching any PCK knowledge relating to knowledge of their EFL learners and their characteristics (PCK-KLLC) and there was little integration of any knowledge they may have had of learners' educational contexts and cultures (PCK-ECC).

4.6.1 EFL teachers' existing professional learning

The findings from the survey analysis with fifty-two EFL teachers suggested that they had little access to professional learning activities (section 4.5.1) that would encourage them to de-privatise their teaching through lesson observations and receiving feedback from their supervisors or colleagues. They also had few collaborative activities in their schools and had little scheduled time to plan and prepare lessons. They had few opportunities to engage in reflective practice in their schools, although they indicated a willingness to engaging in professional learning activities that would improve the quality of their instruction.

The findings from the larger group of 52 teachers are similar to the findings from the survey data, interview responses, documents analysis and classroom observations of the five EFL teachers in this rural regency. These teachers showed a high sense of responsibility for providing students with high quality learning and were willing to improve their professional knowledge. They said they had limited opportunities for professional learning through which they might de-privatise their teaching, collaborate with colleagues and reflect on their practice. They lacked scheduled time to prepare their lessons and generally did not spend time planning or preparing lessons with their colleagues. These findings support the findings of a previous study, that having limited opportunity for professional learning negatively impacted on the quality of EFL teachers in rural areas in ENT (Djahimo, 2016). Djahimo argued that selecting senior teachers to participate in professional learning in rural areas influences improvements in teaching quality in the schools. Another recent study reported that only a small number of teachers were selected to attend professional development to upgrade their knowledge (Wulyani, Elgort, & Coxhead, 2019) and that those not selected for the professional development would generally have to pay for it. Having to pay would discourage teachers from participating and thus developing their teaching (Djahimo, 2016).

It has also been found that the type of professional learning in which Indonesian teachers have opportunities to participate is likely to be limited to traditional professional development programs such as one-off seminars or workshops (Chang, et al., 2014). The concept of collaborative and reflective professional learning is new in Indonesia. Having limited funds available for teachers in rural schools to go to professional learning (Jalal et al., 2009; Nugroho, 2018,) combined with contextual factors such as school location, school leadership and professional learning policies, is a barrier to teachers' professional learning (Muhammad & Ali, 2016).

The findings from the interview responses, document analysis and classroom observations of the group of five teachers in this study suggest that a reformation is needed in the way schools provide opportunities for rural teachers in ENT to pursue school-based professional development. A school-based PLC could be one solution, where teachers in rural schools could undertake professional learning in their own school contexts. This would not only reduce the costs of professional learning but could be based on teachers' learning needs. However, a regular schedule would need to be arranged with teachers to ensure they had enough time to participate in such an intervention on a weekly basis. Ahn (2017) found that scheduling a regular time for PLC meetings is important for its effective implementation. Having a system that supports teachers' school-based professional learning in rural schools could ensure that rural students are not left behind in their learning, impacting negatively on their future prospects.

The findings from the survey with 52 teachers revealed that a high percentage of EFL teachers in this regency were novice teachers, and that they did not consider many aspects of the QTF elements in their teaching, especially in relation to teaching HOT. Furthermore, interviews, classroom observation and document analysis suggested that the EFL teachers had PCK limitations related to teaching HOT, which is similar to what has been

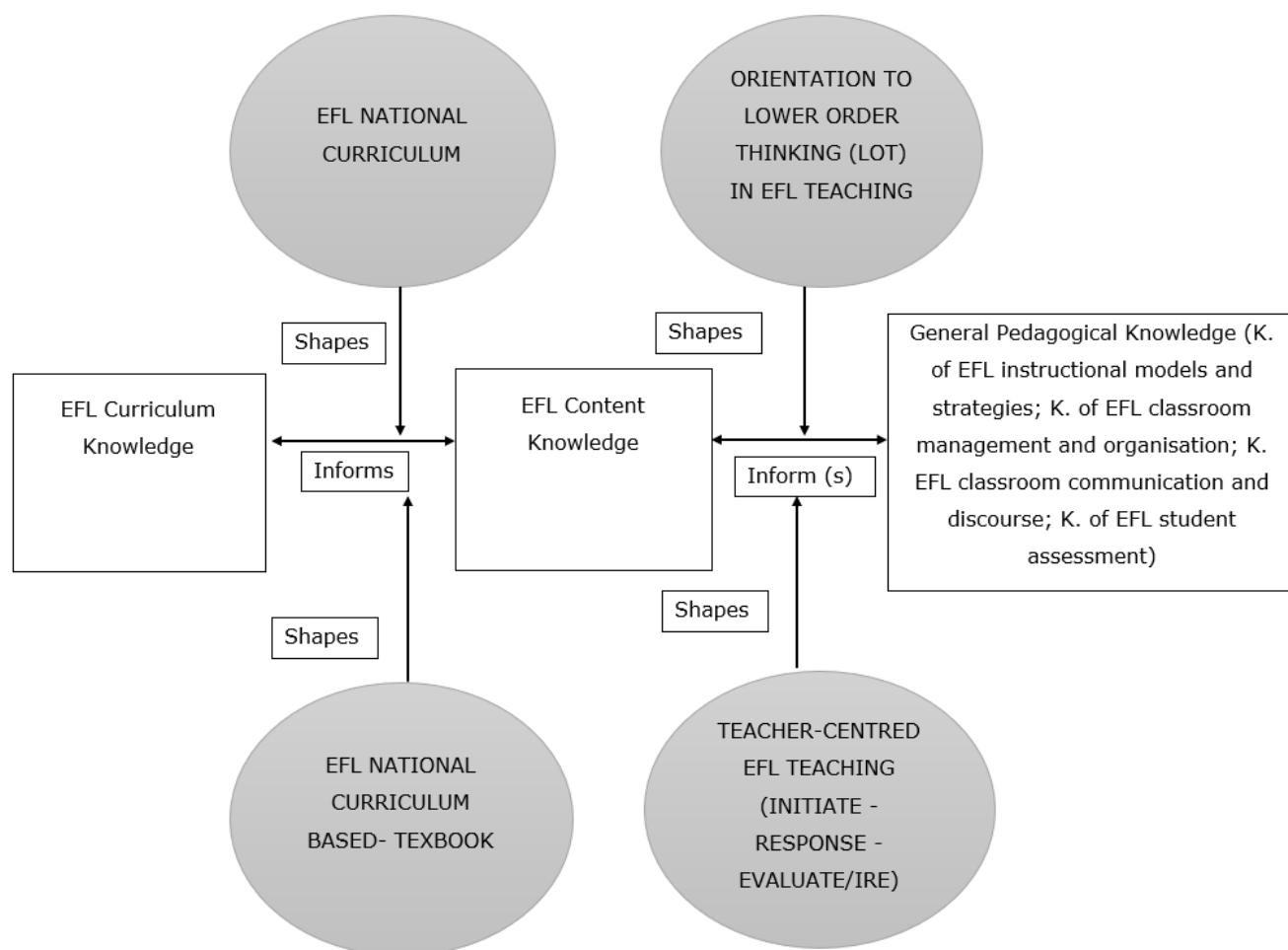
reported in previous studies in the western part of Indonesia, e.g., in Yogyakarta (Triastuti, 2014), Banda Aceh (Ibrahim, 2016), Lampung (Rido, Nambiar, & Ibrahim, 2016), Malang (Wulyani, Elgort, & Coxhead, 2019), and Surabaya (Nugroho, 2018). Lacking knowledge of HOT hinders teachers' PCK development and impacts on the quality of their teaching. It would benefit these teachers to be involved in professional learning that addresses their PCK for teaching HOT in an environment where they can collaborate and reflect on their practice. This approach has been found to stimulate PCK development (Chen & Goh, 2014; Evens et al., 2019; Mu, et al., 2018; Wongsopawiro et al., 2017).

4.6.2 EFL teachers' existing PCK components

The findings from the survey analysis with fifty-two EFL teachers suggested that they gave limited consideration to some important aspects of the QTF in their teaching, indicating that their PCK did not focus on supporting students' learning and they gave little consideration to HOT in their teaching. These findings are similar to the findings from interviews, classroom observations and document analysis with the smaller group of five EFL teachers.

Teachers' existing PCK components and PCK needs are shown in the adjusted model developed from the findings from the interview responses, document analysis and classroom observations of the five teachers in this study. The adjusted model shown in Figure 4.11 (Aydin & Boz, 2013, pp.620-622) detailing the integration of EFL teachers' PCK components, guides the discussion in this section.

Figure 4.11 Pre-intervention teachers' PCK components and classroom practice map (adjusted from the previous model) (Aydin & Boz, 2013, pp. 620-622)



The adapted model in Figure 4.11 shows that EFL teachers' classroom teaching was based on the required curriculum and relied heavily on the curriculum-based textbook. It also shows that teachers adopted a teacher-centred approach and promoted only LOT in their EFL lessons.

The findings from the interview responses, document analysis and classroom observations of the group of five teachers suggest that their EFL PCK-CurrK was informed by the prescribed EFL curriculum textbook, which has been designed to ensure that students cover the required topics in Indonesia's national curriculum and to ensure that they are prepared for the national examination. Textbook-based teaching promotes a teacher-directed classroom and discourages active learning and the development of students' creativity (Maijala, 2020). Teachers need to be

supported if they are to be able to prepare and develop lesson plans with teaching strategies that encourage critical thinking. It is important that teachers have opportunities to discuss the required EFL curriculum syllabus and align it with their lesson planning and teaching so they are able to integrate HOT into their lessons. This is a focus of the PLC described in Study 2 (see Chapter 5).

The pre-intervention teacher survey, interviews, teaching observations and lesson plans reveal that EFL teachers in these rural schools had misconceptions about HOT and rarely considered HOT learning goals and activities. Their lesson plans and teaching practices reflected rote learning, with students only having opportunities to learn by repeating, copying, memorising, and practising role plays in their learning. One of the five teachers, Ruben, pointed out that he did not provide students with HOT in his teaching because teaching English means copying native speakers only. This finding concurs with other research showing that teachers in Indonesia give very limited attention to including HOT in their classrooms (Chang et al., 2014; Ragatz, Sugiarti, & Iskandar, 2015; Ree, 2016, Sunggingwati & Nguyen 2013). A recent study conducted in Indonesia revealed that some EFL teachers, like teachers in this study, have misconceptions of HOT and how HOT activities can be included in their teaching as required by the curriculum (Djami & Kuswandono, 2020). This finding suggests that limited understanding of the curriculum can negatively impact the quality of EFL teaching and indicates that teachers need to have opportunities to develop a sound understanding of HOT and their PCK for teaching HOT.

A PLC intervention is one way that could be used to assist teachers develop their PCK for teaching HOT. The finding that teachers relied on textbooks in their EFL teaching also shows the need to support teachers to re-design or modify textbook activities to promote HOT which is required by the EFL 2013 revised curriculum and the Indonesian Government Standard for Basic and Advanced Educational Content Policy

Number 21 Year 2016 of the Graduate Standards Competency (Kemendikbud, 2016a). So far this has not been a focus in prevailing/required EFL textbooks.

Furthermore, the five EFL teachers tended to use an exposition strategy in their teaching where they employed a lecturing style that was limited to Initiate-Response-Evaluation/IRE. This finding concurs with other studies carried out in Indonesia that have found that Indonesian teachers mostly use exposition teaching rather than using investigation, practical work and problem-solving methods (Chang et al., 2014; The World Bank, 2010). Again, this indicates that teachers need to learn how to encourage more meaningful communication in their classroom interactions; a PLC intervention could provide teachers with opportunities to discuss teaching strategies and reflect on how they might use a problem-solving approach in their teaching.

The findings from the interview responses, document analysis and classroom observations of these five teachers suggest that teachers had limited PCK related to classroom management and organisation. This is consistent with the findings of a previous study where it was found that EFL teachers in Indonesia spent a good deal of classroom time managing students' behaviour, which hindered the learning process (Rido, Nambiar, & Ibrahim, 2016). A PLC could be tailored to assist teachers to apply effective classroom management strategies designed to help students learn how to self-regulate their behaviour.

The findings from the interview responses, document analysis and classroom observations of these five teachers suggest that they had limited PCK related to assessing students' HOT in their classrooms. Like other teachers in Indonesian schools (Utami, Nurkamto & Marmanto, 2019), they were oriented toward LOT in their classroom assessment which covered understanding, remembering and applying. A PLC

intervention could help teachers develop detailed task criteria for the assessment of HOT in their lesson planning.

The findings from the interview responses, document analysis and classroom observations of these five teachers suggest that teachers did not consider students' background knowledge in their teaching. This is consistent with the results of another Indonesian study that found that some EFL teachers largely followed prescribed textbooks in their teaching (Hawanti, 2014). A PLC intervention could assist teachers to explicitly consider and include their knowledge of learners and their backgrounds so that students' engagement in EFL learning could be encouraged. Most of the EFL teachers did not make meaningful connections between their lessons and students' culture and context. A PLC intervention could help teachers focus on planning to include students' local context and culture in lesson activities.

Each of the PCK components are inter-related and each component shapes and informs others so that EFL teachers' PCK-EFL CurrK informs their PCK-CK coverage. A PLC intervention could assist teachers in this rural regency to develop lessons to promote HOT as required by the new curriculum; it could also focus on integrating different PCK components to promote HOT. Consequently, it is important to give rural EFL teachers the opportunity to enhance their PCK related to teaching critical thinking.

4.6.3 EFL teachers' existing beliefs and practices relating to HOT in EFL teaching and learning

The findings from the survey completed by the large group of fifty-two EFL teachers suggest that they had a high sense of responsibility for their students' learning. At the same time, they believed that their students were not capable of deep understanding of the content taught in EFL lessons. This is similar to the findings from the survey data, interview responses, document analysis and classroom observations of the small group of five EFL teachers in this rural regency. These EFL teachers held

the belief that their students were unable to learn HOT and had limited knowledge of HOT, which then influenced their EFL teaching. They also expressed the belief that students were not able to learn HOT in EFL lessons due to their low English proficiency, which aligns with studies that have found that teachers believe that students with low achievement are not capable of learning HOT and do not need to be taught about it (Zohar et al., 2001; Zohar & Dori, 2003).

The findings from the questionnaire data, interview responses, document analysis and classroom observations of the group of five EFL teachers show that they did not have a good understanding of HOT concepts and that this impacted on their classroom practice related to teaching HOT (Kusumastuti, Fauziati, & Marmanto, 2019). It indicated that they needed opportunities to learn how to prepare lessons with a focus on HOT (Ginting & Kuswandono, 2020) and that they needed to develop their understanding of the concept of HOT. A PLC intervention could focus on helping teachers develop this understanding and then use it to design learning activities to promote HOT.

These teachers also reported that having limited educational resources in their rural schools hindered them from teaching effectively, which has also been found in previous studies in rural ENT (Djahimo, 2016; Kennedy, Tobing & Toruan, 2019). A PLC could help teachers adjust learning activities and employ resources that are available in their local area. The results of Study 1 indicate that it could be beneficial to provide these rural teachers with an opportunity to collaborate and reflect on their underlying knowledge and beliefs related to teaching HOT; a PLC could enhance their understanding of HOT and their PCK for teaching it.

4.6.4 EFL teachers' PCK needs

The findings from Study 1 have shown that EFL teachers in this regency need to develop a sound understanding of HOT concepts in the curriculum, prepare HOT instructions, HOT activities, and HOT task

criteria. One way to enhance their understanding of HOT concepts is by providing teachers with workshops about HOT concepts during the intervention. In previous studies on QTF, teachers were encouraged to participate in a two-day intensive training session to help them develop good understanding of the process of the QTR (Gore & Bowe, 2015). This kind of training would contribute to addressing their need to build their understanding of the main concepts in the intervention such as HOT.

The findings from Study 1 have shown that the EFL teachers also need to be trained to develop their PCK for teaching HOT. They need to create lesson plans with teaching strategies that encourage critical and creative thinking through HOT instruction in EFL lessons as required by 2013 EFL curriculum. One way to do this is by providing on-going professional learning on collaboratively designing lesson plans with HOT activities in lessons. In this professional collaboration, they can get support and practice in how to re-design or modify textbook activities or design learning activities to promote HOT and employ resources that are available in the local area of each school. Also, they could have opportunities to discuss teaching strategies and reflect on their teaching to promote meaningful communication in their classroom interactions. They can be trained to develop detailed task criteria for the assessment of HOT in their lesson planning.

Furthermore, findings show that teachers need to develop their general PCK in order to be able to apply effective classroom management strategies and help students self-regulate their behaviour. They also need to explicitly consider and include their knowledge of learners and their backgrounds as a way of encouraging students' engagement in EFL learning. In addition, they could be trained to include activities in lessons that are relevant to students' local context and culture. Studies have suggested that teachers' professional learning activities that promote collaboration through working, sharing, and discussing teaching strategies and student work contribute to teachers' continuous knowledge

development (Desimone 2009; Desimone et al., 2013; Porter et al., 2003). Collaboration could facilitate teachers to discuss ways of encouraging student-centred learning activities, and learn how to provide and receive useful feedback from each other. It could provide opportunities for teachers to watch their own teaching and their colleagues' teaching through videos, and provide opportunities for them to evaluate, reflect on and discuss their teaching and their colleagues' teaching. In conclusion, EFL teachers professional learning must consider and address EFL teachers' PCK needs effectively.

4.7 Summary

The findings of Study 1 indicate that EFL teachers in a rural regency of eastern Indonesia had limited opportunity to participate in professional learning. Most of their PCK, as examined through surveys, interviews, observations, and documents, was focussed on managing student behaviour: keeping noise levels down, maintaining the 'appearance' of learning behaviours, rather than on PCK that supports students' learning. These teachers lacked PCK for teaching HOT in EFL lessons. A surprising finding that emerged from this study is that the five teachers who volunteered for the professional learning intervention believed that their students were not capable of learning HOT and that this belief was driving their decision not to include HOT in their EFL lessons. However, data analysis suggests that these teachers did not have PCK for teaching HOT and therefore training to develop this would be beneficial for them.

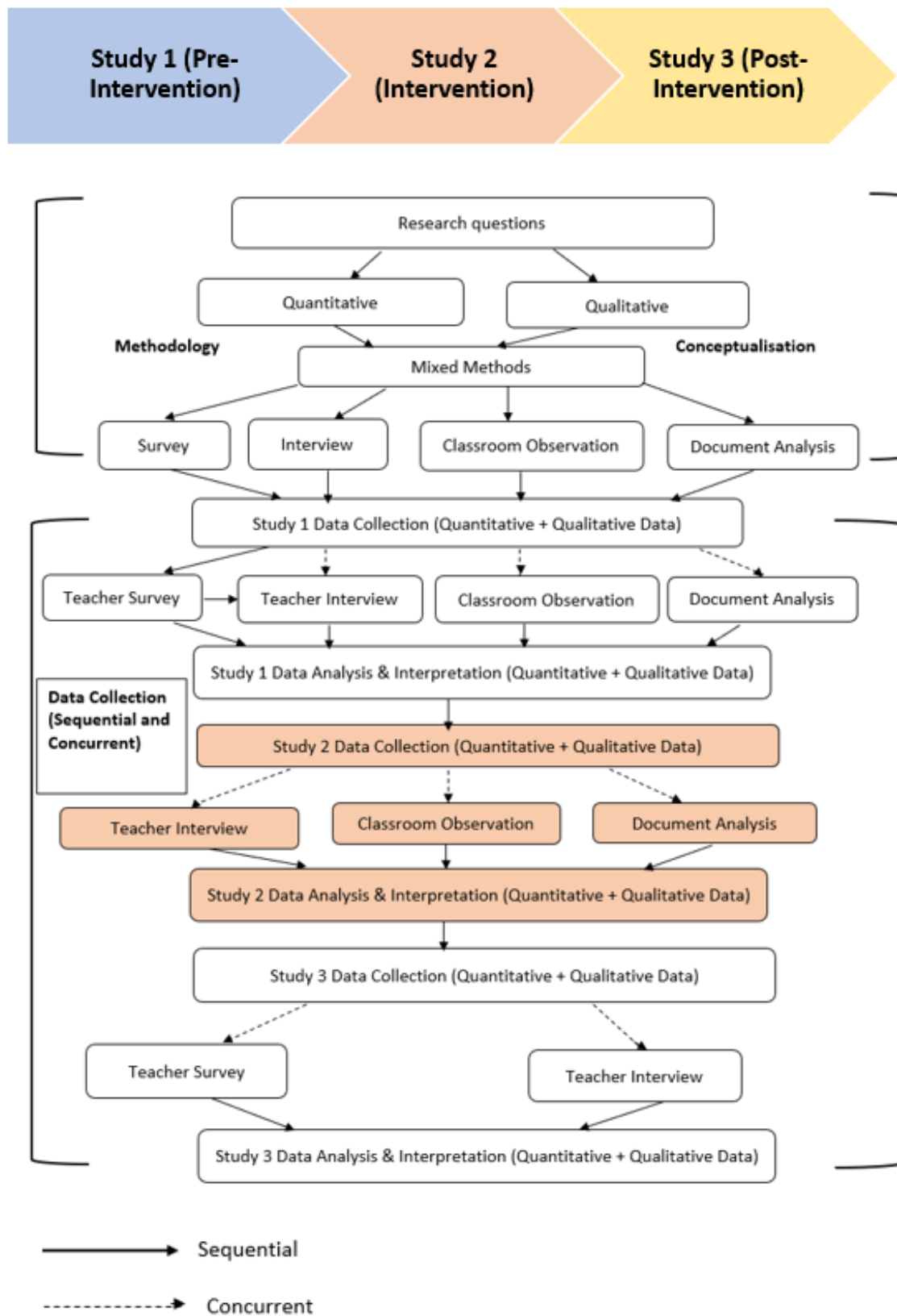
Chapter 5 of the thesis focuses on Study 2 in which there is a description of a PLC intervention that was designed and carried out in order to improve EFL teachers' PCK in general and for teaching HOT in particular.

CHAPTER 5 THE IMPACT OF A PLC ON RURAL INDONESIAN TEACHERS' PCK FOR HOT: EFL TEACHERS' PERCEPTIONS

5.1 Introduction

This chapter presents the second of three studies reported in this research. The aim of the second study was to understand the impact of a professional learning community (PLC) intervention on English as a Foreign Language (EFL) teachers' pedagogical content knowledge (PCK) for promoting higher order thinking (HOT) in rural students in Bintang regency in East Nusa Tenggara (ENT) province, Indonesia. The findings of Study 1, reported in the previous chapter, contributed to Study 2 as reported in this chapter, with its focus on the PLC intervention in which five EFL teachers participated. Figure 5.1 shows the links between the three studies and the position of this study in the investigation.

Figure 5.1 The links between Study 1, Study 2 and Study 3



5.2 Literature review

5.2.1 Rural EFL teachers' PCK for teaching HOT

The results of Study 1 indicated that five EFL teachers in the rural regency of East Nusa Tenggara (ENT) had limited PCK and that was impacting on their low teaching quality. Lack of PCK-Curriculum knowledge (CurrK) influenced their PCK-Content knowledge (CK) and PCK-general pedagogical knowledge (GenPK). The teachers employed a teacher-centred approach relying heavily on EFL textbooks, suggesting that they did not understand what HOT is and needed to be guided by textbooks in their teaching. It was observed that LOT was promoted in their EFL textbooks and in their classes, as reported in Chapter 4 section 4.5.2.2.1. The findings suggested that EFL teachers in this rural regency in ENT needed to improve their PCK. Research has found that pre-service education (König et al., 2016), teaching experience (Mulholland & Wallace, 2005; Van Driel & Berry, 2010) and professional learning (Borko et al., 2010; Evens et al., 2019) are the main sources of teachers' PCK development. With this in mind, a PLC was chosen as a professional learning setting to provide opportunities for EFL teachers to update their PCK through collaboration and reflection with their colleagues (Mu et al., 2018).

The teaching of HOT skills is a requirement of both the ELT 2013 curriculum (Kemendikbud, 2013) and the Indonesian Government Standard for Basic and Advanced Educational Content Policy Number 21 2016 of the Graduate Standards Competency (Kemendikbud, 2016a), to improve students' EFL proficiency in thinking critically and creatively. A questionnaire study conducted with EFL teachers in Java about their PCK and perspectives on the changes in the 2013 curriculum revealed that teachers expressed confidence in their pedagogical knowledge, content knowledge, and their PCK. They felt confident they could implement the new curriculum in their classrooms (Rahmani, Mulyono, & Novitasari, 2017). Rahmani et al. (2017) prematurely claimed that EFL teachers have

good PCK for implementing the new curriculum. However, the finding conflicted with the below average result achieved on EFL teachers' test of competency (Kemendikbud, 2019), discussed in Chapter 2.

Studies to investigate EFL teachers' implementation of HOT in Indonesian classrooms have revealed that many teachers still face challenges implementing HOT in their EFL lessons. Tyas, Nurkamto, Marmanto, and Laksani (2019) looked into the challenges for EFL teachers in developing HOT-based questions and found that many EFL teachers did not have adequate knowledge of the HOT concept and had limited PCK to be able to effectively teach HOT in their lessons; this contributed to poor HOT implementation in their EFL classrooms. Attending one workshop on HOT did not prove to be effective as teachers continued to avoid embedding HOT in their teaching. It was clear they needed more practice to develop their understanding of HOT and how to design HOT-based questions. The lack of educational resources available for teachers added to their difficulty in implementing EFL lessons with a HOT orientation. The study by Tyas et al. (2019) revealed that teaching HOT remains a challenge for many EFL teachers in Indonesia who have limited PCK related to teaching this central aspect of critical thinking.

In another recent study (Indriyana & Kuswando, 2019) investigating EFL teachers' HOT strategies in Central Java's Junior High Schools, teachers reported using five strategies to develop students' HOT reading skills. First, teachers informed students of the HOT learning objectives to clarify the purpose of learning about them and to help students achieve them. Then teachers provided students with HOT questions that allowed them to analyse, evaluate and create in their learning activities, and thus develop HOT skills. Next teachers used group discussion to encourage students to evaluate their learning by sharing and exchanging ideas. Following this, teachers provided feedback to enhance students' HOT by helping them refine and improve their understanding of topics they were learning about. Finally, teachers motivated students to be critical by

explicitly encouraging them to evaluate their learning and, in so doing, develop critical and creative thinking in their EFL learning (Indriyana & Kuswandono, 2019). That study showed that EFL teachers have to explicitly teach HOTS strategies if they are to help students develop HOTS, and that PCK relating to HOTS learning strategies is crucial if they are to do so.

Previous studies have focussed mostly on describing EFL teachers' pedagogical knowledge related to teaching HOTS rather than on improving their PCK for teaching HOTS; this issue remains underexplored in ENT province. Ginting and Kuswandono (2020) highlighted this in their recent study with EFL teachers in ENT province which found that teachers lacked PCK for teaching HOTS and did not value and prioritise the importance of HOTS in their teaching. They struggled to prepare HOTS lesson activities due to their inadequate PCK and believed their students were not capable of learning HOTS. Study 1 (reported in Chapter 4) found teachers' lack of understanding of HOTS and their belief that students were not capable of learning HOTS posed barriers for HOTS teaching in EFL classrooms. The research studies discussed in this section show there is a substantial gap in teachers' PCK that needs attention if EFL students' HOTS is to improve. They suggest attention needs to be focused on providing professional learning opportunities for teachers so they can implement HOTS in their classroom teaching.

5.2.2 Supporting EFL teachers' professional learning

One way to improve teaching quality is by providing professional learning for teachers. An effective approach to providing considerable and sustained professional learning, as discussed in Chapter 2, is a PLC. It can facilitate teachers' knowledge development and improve their teaching quality, leading to higher student engagement and learning outcomes (Bolam et al., 2005; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006; Vescio, Ross, & Adams, 2008). A PLC is a process "in which the teachers in a school and its administrators continuously seek and share learning,

and act on their learning. The goal of their actions is to enhance their effectiveness as professionals for the students' benefit" (Hord, 1997, p. 6). As Stoll et al. (2006) described, "The notion [PLC], therefore, draws attention to the potential that a range of people based inside and outside a school can mutually enhance each other's and pupils' learning as well as school development" (p. 223). The findings from Study 1 revealed EFL teachers in the rural regency of ENT had limited opportunities to de-privatise, collaborate and reflect, and a study in ENT suggested teachers in rural areas of Indonesia had limited opportunity to participate in this type of professional learning (Djahimo, 2016). Study 1 (see Chapter 4) supported this with the finding that rural EFL teachers had limited opportunities to de-privatise, collaborate and reflect on their teaching. A study by Rahman (2016) found that different types of professional development (PD) impacted on teachers' professionalism. A traditional government-based PD activity was not favoured by teachers because they believed the content was irrelevant to their practice. Some internal school-based PD programs also saw teachers only receive information without having opportunities to engage in active learning. Teachers said they would prefer to have PD where they could design lesson plans in a collaborative way in their schools, and mentioned the teacher working group (Musyawarah Guru Mata Pelajaran [MGMP]) as an example of effective PD. However, they said they had limited time to join this type of PD because it was irregular. Schools also had to provide teachers with adequate resources, facilities and materials to ensure they could transfer their knowledge into their classroom practice. Thus, the school principal had the important role of ensuring that a school culture of collaboration was established, adequate educational resources and facilities were provided to support teachers' practice, and teachers had opportunities to participate in professional learning opportunities. There is a critical connection between having a strong PLC culture in schools and sustainable school improvement efforts (Lee & Louis, 2019). Rahman (2016) advised that without supportive school leadership, teachers would

not be able to maximise their development and students' learning would suffer in the end. Rahman's study found that Indonesian teachers mostly participated in government-based PD programs characterised by an authoritarian approach and were presented with content that was irrelevant to them. That study indicated a need for professional learning that supports teachers to be active and reflective collaborators in their learning and that any PD program must be relevant to their needs. Study 2, presented in this chapter, sought to address this need.

An investigation of the perceptions of EFL teachers on continuing professional development (CPD) found that teachers considered CPD to be vital for their professional improvement as teachers (Cirocki & Farrell, 2019). EFL teachers in Girocki and Farrell's study reported further benefits from participating in CPD, i.e., improved self-confidence, teaching quality and student learning outcomes. The study showed that EFL teachers mostly participated in informal conversations, 1-day workshops, performance appraisals, and 1–3-day seminars and conferences. However, they did not participate in many CPD networks, did not carry out observations of other teachers in their school and other schools, and did not engage in collaborative research. Despite the benefits of CDP for teachers, more active activities were not offered to them. Girocki and Farrell's study suggested that high quality CPD was needed in Indonesia to address teachers' needs in their teaching contexts. They recommended that CPD content should include practical pedagogical strategies (related to instruction and assessment) in EFL and should encourage inquiry into teachers' classrooms through action research where teachers could design their lessons, prepare teaching materials, assess students' EFL skills, and discuss their teaching collaboratively. With teachers having few opportunities to collaborate, it was recommended that government-based PD programs should take into consideration collaborative PD (such as PLCs for teachers) that is based on and targeted to teachers' professional learning needs.

A study with teacher educators carried out by Widodo and Allamnakhrah (2020) found that a PLC made a positive contribution to developing teachers' PCK mainly due to teachers having the opportunity to review their curriculum and modify their lessons collaboratively based on feedback from their colleagues. A related investigation in Papua (Suhirman, 2016) employed a lesson study intervention and found that allowing teachers to collaboratively plan, teach and reflect on their lessons contributed positively to teachers' self-confidence. Reflective practice helped them learn more from their colleagues about strategies for teaching, classroom management and assessment. Suhirman's study indicates the benefits of collaborative and reflective professional learning as a way of helping teachers improve their pedagogical knowledge and teaching practice. These studies suggest that it could be valuable to use a PLC for teachers' professional learning in rural schools to provide them with support for collaboration with their colleagues. Such an approach could reduce the professional isolation experienced by rural teachers.

When implementing a PLC, it is important to be mindful of the context in which the professional learning is being carried out to ensure that teachers are involved because they are motivated and want to improve their teaching, otherwise they are unlikely to implement or transfer their new knowledge to their classroom practice. The teachers in a study by Mu'in, Al-Arief, Amelia, and Fadilla (2018) said they considered Teacher Professional Education (PPG) to be effective when it was well-structured, and they had enough time to participate. They wanted to pursue more PD to improve their teaching quality but found it hard to do this because they had busy work schedules, lacked support from schools for PD, the costs were high for PD, they found some of the PD content to be irrelevant, and they needed to attend to other family responsibilities (Mu'in et al., 2018). Earlier, Widodo and Riandi (2013) found that the challenges of employing PD for Indonesian teachers were related to the distraction of outside responsibilities, a lack of commitment and motivation to the program,

teachers preferring face to face PD rather than online PD, and the lack of adequate ICT skill or infrastructure for online PD activities (Widodo & Riandi, 2013). Moreover, Muhammad and Ali (2016) suggested that the location of a school and its facilities contributed to teachers' professional performance. They found that supportive colleagues aided the development of teachers' professionalism as did supportive school leaders who provided opportunities for teachers to continue their professional development. Muhammad and Ali (2016) identified that a supportive teacher supervisor was important for teachers' professional growth.

Studies on professional learning in Australia have suggested Quality Teaching (QT) (NSWDET, 2003) is an effective framework for improving teachers' teaching quality and their pedagogy (Gore & Rickards, 2020; Gore & Rosser, 2020). A recent study in Australia by Gore and Rosser (2020) reporting on the impact of Quality Teaching Rounds (QTR) that employ QT, suggested that using the QT framework in QTR positively impacted on teachers' lesson quality across different grades and subjects. The teachers reported finding new insights as a result of their collaboration using the QT framework where they learnt from other teachers' practices and related it to their own. The opportunity to collaborate within QTR allowed them to get to know their colleagues with the result that they were more comfortable about asking for their assistance. Another recent study by Gore and Rickards (2020) reported that the use of the QT framework in the QTR encouraged experienced and novice teachers to learn together to improve their practice by taking the opportunity to observe and be observed teaching.

This highlights the potential of using QT as a framework for teachers' collaboration and for establishing a collaborative school community where teachers can de-privatise their practice as they enhance their pedagogy and practice across different subjects and grades. In addition, using the QT framework in a PLC collaboration can minimise the power distance between senior and junior teachers because it "provides teachers with a

common language and set of conceptual standards absent in much collaborative PD, including work on PLCs and instructional rounds” (Gore, & Rickards, 2020, p. 4). The current study adopted the Quality Teaching Framework (QTF) because it is a framework that underpins collaboration within a PLC intervention to improve teachers’ PCK (as explained in Chapter 3, Section 3.2.4). This is the first time a PLC intervention employing the QTF has been introduced and reported in the Indonesian context.

The PLC used by Gore employed “a Round”, which is comprised of three sequential sessions that occur on a single day” (Gore et al., 2017, p. 100). These three stages consist of reading discussion, lesson observation and coding, and discussion of the lesson using the Quality Teaching Framework (Gore et al., 2017). Teachers are encouraged to be involved in active learning both individually and collaboratively. The stages in Gore’s study reflect Stoll and Louis’ (2007) suggestion that “PLCs are created, managed and sustained through key processes: optimizing resources and structures; promoting individual and collective professional learning; explicit promotion, evaluation and sustaining of an effective PLC; and leadership and management supporting PLC development. Furthermore, the extent to which these four processes are carried out effectively is a third measure of overall PLC effectiveness” (Stoll & Louis, 2007, p. 19).

Furthermore, video-based reflection (VBR) has been found to have many positive benefits for teachers, such as encouraging deeper reflection on their teaching (Borko et al., 2008; Seidel et al., 2011), deepening their discussion on teaching (Jaworski, 1990), changing their approach in teaching (Cutrim Schmid, 2011; Christ, Arya, & Chiu, 2014), gaining new insights from their practice (Tripp & Rich, 2012) and providing evidence of teaching and learning practice (Harlin, 2014). Although VBR has the potential to encourage high quality discussion and reflection on teachers’ practice, its use in professional learning for EFL teachers in Indonesia has been underexplored. The studies discussed in this section indicate the

need for a PLC that encourages teachers' active collaborative and critical reflection on their practice. A substantial/extensive professional learning approach is needed rather than one-off type training, and a complex approach is also needed with the combined foci on better understanding of how to teach HOT and how students learn HOT. This study makes an original contribution by employing the QTF as part of professional learning in the context of rural schools in Indonesia and employing VBR within a PLC for EFL teachers in this remote area.

A PLC through its a collaborative approach to professional learning has been found to be an effective alternative to the one-off session model of professional learning. A PLC encourages teachers to engage in deep and meaningful learning where they can develop their teaching practice in a supportive and collaborative environment (Penner-Williams et al., 2017; Vescio et al., 2008). This approach gives teachers the opportunity to enact new learning in their teaching practice in their own classrooms and to reflect on their own and colleagues' teaching in a collaborative environment. Such an approach was developed in this investigation as a professional learning intervention for five participating teachers with a particular focus on their PCK to teach HOT in EFL; this is the subject of Study 2 described in this chapter.

5.3 Research aims and questions

The overarching aim guiding this research was to find out if a PLC intervention to develop EFL teachers' PCK for promoting HOT in their students was effective for improving their teaching practice and students' learning. Study 2 addressed the following research questions:

RQ 2. 1 Has the PLC intervention designed for this study influenced EFL teachers' PCK? If so, in what way?

RQ 2. 2 Has the PLC intervention designed for this study influenced EFL teachers' PCK related to their beliefs and attitudes about

teaching HOT, and their beliefs about students' ability to learn HOT in rural schools? If so, how?

RQ 2. 3 Has the PLC intervention designed to improve EFL teachers' PCK influenced teachers' instruction to promote HOT? And if so, how/in what way?

RQ 2. 4 Does teaching of HOT influence rural students' use of HOT in EFL classes?

RQ 2. 5 How useful is the QTF for structuring a professional learning intervention in the context of Indonesian schools in terms of promoting teachers' respectful communication and reflection on lesson planning and teaching?

RQ 2. 6 Is the use of video-based discussion for EFL teachers' critical reflection on their practice an effective approach in a PLC? If so, in what way?

5.4 Method

5.4.1 A PLC Intervention

This section explains the PLC model for teachers' professional learning that was designed and implemented in both schools where the five participating teachers worked. Based on the findings and recommendations from the studies discussed in this chapter, and also in Chapter 4 (Study 1), the following considerations were addressed in designing the PLC intervention aimed at improving the PCK in/about incorporating HOT in the EFL teaching practice of the five participating teachers. Table 5.1 shows findings from Study 1 that informed the design of Study 2.

Table 5.1 Elements of findings from Study 1 that informed the design of Study 2

Element	Findings from Study 1	Study 2 Design Considerations
Teachers' knowledge of HOT	Teachers lacked knowledge and understanding of HOT concepts	Workshop about HOT concepts

Teachers' PCK for teaching HOT	They did not prepare their lessons to include HOT	Workshop on designing lesson plans with HOT activities in lessons
	Teachers copied lesson plans rather than developing their own lesson plans	Designing lessons collaboratively
	They merely followed prescribed textbook activities that encourage LOT	Practice with modifying textbook activities to encourage HOT
Teachers' general PCK	They did not include relevant materials from local culture and context into their lessons	Discussion of including local culture and context into the lessons
	They lacked classroom management knowledge and self-regulation of behaviours	Sharing classroom strategies for managing student behaviour or self-regulation of behaviour
	They did not know how to develop task criteria	Work on developing task criteria for their learning tasks
	They did not include students' background knowledge into their lessons	Discuss how to include students' background knowledge into learning activities
	They did not provide opportunity for students to have sustained communication in the lessons	Discuss how to encourage students to share their ideas or present their work
Teachers' professional learning	They employed a teacher-centred approach in their teaching	Discuss ways of encouraging student-centred learning activities
	Teachers did not provide and receive useful suggestions from their colleagues about teaching materials, strategies, lesson plans, assessment, learning activities, curriculum, etc.	Learn how to provide and receive useful feedback for teachers through collaboration
	They had never watched another teachers' teaching	Provide opportunities for teachers to watch their own teaching and their colleagues' teaching through videos
	They did not meet frequently to reflect on their teaching	Provide opportunities for teachers to evaluate, reflect on and discuss their teaching and their colleagues' teaching

The PLC intervention included two phases. In the first phase, the teachers attended the initial workshop focussed on a PLC, the QTF and HOT. In the second phase, the teachers started their PLC cycle in each of their schools. This PLC cycle consisted of 5 steps. First, teachers collaborated to design EFL lesson plans, then a volunteer teacher taught an EFL lesson, after that all teachers observed a video of a lesson and coded a lesson video. Finally, all teachers reflected on a lesson (see Figure 2.6 in Chapter

2). Each phase was conducted at each of the schools separately, i.e., two teachers from School A participated in the PLC at School A and three teachers participated at School B. The PLC intervention took 6 weeks with 6 cycles in School A and 9 weeks with 9 cycles in School B. There were three PLC cycles for each teacher.

5.4.1.1 Initial workshop: focus on the PLC, QTF and HOT

Before the initial workshop took place, the five EFL teachers were asked about their understanding of HOT concepts, as HOT is a requirement for the new EFL 2013 revised curriculum. The findings from Study 1 suggested that the teachers lacked knowledge and understanding of HOT concepts and how they could implement them in teaching. Observations showed that their practices reflected EFL lessons that covered only LOT.

The first PLC session was intended to encourage teachers' understanding of HOT and how they could integrate HOT into their EFL lessons or develop PCK for teaching HOT. The PLC intervention began with brainstorming about HOT and there was discussion of the concepts of a PLC, the QTF and HOT. In addition, HOT was modelled and reflected on. The researcher shared her knowledge about PCK and HOT and based each step of the intervention on her understanding of the needs of the teachers in their context. The researcher worked collaboratively with the teachers throughout the cycles so that every week teachers learned about how to improve their PCK using the QTF. They designed their lessons collaboratively within the PLC.

In the first session, lessons that had been video recorded were used as examples so that teachers were introduced to PLC activities. The second session was intended to develop their understanding of PLC cycles and to have practice designing lessons together that would encourage critical and creative thinking through students having opportunities to analyse, evaluate and create (Krathwohl, 2002). After this activity the PLC group watched a lesson video and practised individually coding it using the QTF

observation sheet (NSWDET, 2003) and QTF practice guidelines (NSWDET, 2003). Following this they shared their coding with other teachers in the PLC and reflected on the codes and teaching video as a group.

During the initial workshop teachers in each school were invited to develop a group code of conduct for the PLC, as recommended by van Es (2012) and Coles (2013). Teachers welcomed a structure that would help them share important values and norms and would help them work in collaboration with their colleagues in a constructive, collegial and supportive way. They recognised the value of such a code for navigating their collaboration and ensuring a mutually respectful and safe learning experience. The code of conduct was developed through a researcher-facilitated conversation with teachers about professional discussions. Teachers brainstormed their ideas relating to norms and values that they considered important to help them work collaboratively, then noted and agreed on common items to guide their collaborative sessions together. Studies have recommended that building trust is an important aspect of PLC collaboration because it facilitates behaviours that influence trust within a PLC collaboration: treating team members with patience and kindness/benevolence, encouraging reliability from team members, sharing personal information/openness, and sharing teaching strategies/competence (Hallam, Smith, Hite, Hite, & Wilcox, 2015). Creating relational conditions was necessary for enhancing effective collaboration within the PLC and gaining teachers' trust through creating a safe atmosphere that would nurture their active engagement in the PLC (Haiyan & Allan, 2020). Table 5.2 outlines the code of conduct developed for the PLC in each of the two schools. It shows that teachers in both schools valued similar behaviours and deemed them conducive to productive professional interactions such as those planned for this intervention.

Table 5.2 PLC code of conduct in School A and School B

School A	School B
Use polite language that is based on appropriate professional and cultural values when giving feedback or input	Use polite language to convey ideas based on professional, cultural and family values
Establish respect among colleagues to achieve a good result	Show respect for one another
Show openness	Show openness
Support one another so that everyone progresses and develops	Support one another (give constructive input and take care not to humiliate one another)
Good communication and input should be based on the discussion	Give evaluation and input for the collective purpose of improving teaching
Show commitment to full participation	Show commitment to full participation
Be on time for meetings	Be respectful of time
Work together	Plan together
	Trust each other

5.4.1.2 The PLC Cycle

The PLC cycle consists of five steps (see Figure 2.6 in Chapter 2). The steps were adapted from the Quality Teaching Rounds (Gore & Bowe, 2015) and a lesson study cycle (Stigler & Hiebert, 1999). The researcher worked with two teachers in a PLC in School A and with three teachers in School B's PLC. There were six PLC cycles in School A and nine PLC cycles in School B. Each cycle of PLC focused on one lesson for each teacher in each school. Each teacher had three cycles for three lessons. Each PLC cycle lasted for three days in each school. The first day was devoted to designing lesson plans collaboratively, the second day was for individual teaching, the third day was for observing/watching a lesson video collaboratively, coding the lesson video individually and reflecting on or discussing the lesson coding collaboratively. Detailed information about each step of the PLC cycle is given next.

5.4.1.2.1 PLC Step 1 – Designing EFL lesson plans

Following the initial session when the teachers shared their ideas with the facilitator and further engaged with the concepts of PCK, HOT and PLC, teachers reflected on the modelling and collaborative work that they had engaged in and were asked to choose a lesson topic and identify lesson

goals that would promote the inclusion of HOT activities into an EFL lesson. All teachers and the PLC facilitator (researcher) designed one lesson plan together in each PLC cycle and then inspected the lesson plan collaboratively to evaluate whether each one included HOT activities; this was done with reference to the Revised Bloom’s Taxonomy (Krathwohl, 2002, p. 216). Teachers were assisted to design quality task criteria within the lesson in each PLC cycle in order to help students be clear about the teacher’s expectations and the way the task would be evaluated. Teachers worked collaboratively on one task selected from one lesson and prepared teaching resources to encourage and facilitate students’ engagement with HOT so that the lesson plan could be finalised in the PLC cycle. The time taken to carry out this planning activity ranged from 37 minutes to one hour and 44 minutes; the time taken depended on the time needed by the teachers in each PLC cycle.

5.4.1.2.2 PLC Step 2 – Teaching an EFL lesson

The next step involved one teacher in each PLC group teaching the lesson that had been prepared collaboratively. Each teacher had three opportunities to teach their chosen lessons during the whole PLC intervention. The duration of each EFL lesson varied from 65 minutes to 2 hours 25 minutes. Table 5.3 outlines the lessons taught by each teacher during the PLC cycles in their schools.

Table 5.3 PLC Intervention: Lessons taught by EFL teachers

PLC School A Teachers	Topic of the Lesson	PLC School B Teachers	Topic of the Lesson
Diana	Asking and giving information about animals	Melinda	Descriptive text 'Describing a house'
	Asking and giving information about houses		Recount text
	Describing endangered animals		Recount text
Petrus	Descriptive text 'House'	Steven	Descriptive text 'Asking and giving information'

Recount text 'Personal experience'		Asking and giving direction about public places
Report text 'News'	Ruben	Schedule
		Invitation
		Prohibition
		Asking and giving permission

Each lesson was video recorded so it could be viewed and used by other teachers in PLC Step 3. Using videos of teachers' own teaching and observing the videos of their colleagues meant that teachers were able to reflect on their practice and revise their teaching by attending to feedback from their PLC colleagues. This type of reflection gives teachers the opportunity to review different aspects of their teaching and students' learning, because a video is able to capture various events in the classroom that might not be remembered by the teacher once a lesson was over (Alles, Seidel, & Gröschner, 2019; Borko et al., 2017).

5.4.1.2.3 PLC Step 3 – Observing a video of a lesson

In the third step, in each PLC group in their school, the teachers watched the lesson videos of their teaching together so they would be helped to understand the whole teaching and learning process. One lesson video from each teacher was viewed in each PLC cycle per week. There were six lesson videos from PLC group in School A and nine lesson videos from PLC group in School B. The viewing of the recorded lessons provided material for collaborative examination of the lessons taught as well as reflection in each PLC cycle.

5.4.1.2.4 PLC Step 4 – Coding a lesson video

The next step involved all teachers coding one lesson individually as they watched the video recording of their own and their colleagues' lesson as designed in PLC Step 1. They shared their evaluation of the lesson with others in the PLC group so they could evaluate the lesson videos through their own professional lenses using the QTF elements. Next, they shared

their evaluation with other members of the PLC to encourage critical discussion in each PLC cycle. The focus of the coding was to evaluate the presence and absence of the QTF elements within the lesson video, such as deep knowledge, HOT, task quality criteria etc. The QTF observation form including the 18 elements of the QTF adopted from Gore, et al., (2015, p. 93), and the QTF practice guide (NSWDET, 2003) to guide their coding of elements using the coding scales are included in Appendices 8 and 9.

5.4.1.2.5 **PLC Step 5 - Reflecting on a lesson**

The last step of each PLC cycle involved collaborative analysis of the lesson using the QTF codes. As an example,

they [teachers] take turns to articulate their thinking in reaching a particular code – what they observed in the lesson, what evidence they drew on to make their determination, how they understand or interpret a particular element. After every teacher has shared their views, the group attempts to reach agreement about the best code for that element in that lesson, before moving to the next element. The point is not to quickly agree on a code but to interrogate their assumptions, to carefully consider outliers and alternate views, and to explore what it might take for a lesson to achieve a higher code in that activity (Bowe & Gore, 2017, pp.358-359).

The focus was on sharing and discussing elements of the QTF, such as the presence or absence of HOT, substantive communication, social support or other elements in the lesson. Teachers consulted the QTF practice guide to interpret any elements that they observed from the lesson videos. They had to write down the evidence for their decisions for assigning certain codes.

Within each of the PLC cycles the teachers took turns to share their code for each element and then they discussed collaboratively the group code on the element. This process was important for ensuring that feedback would help colleagues improve their lesson. The focus of this step was not only on a teacher reflecting on their own teaching and receiving feedback

from others, but also on observing, evaluating and reflecting on the teaching practice of others in terms of their implementation of their lesson plan to reach their aims and objectives, and on providing constructive and valuable feedback that would contribute to improving the quality of teaching of each of the participating members in this community of learners. The coding process relied on teachers being clear about the purpose of the PLC, i.e., encouraging collaboration, de-privatising their practice and reflecting critically on it. They used the code of conduct that they had devised earlier to ensure constructive collaboration. The time taken for each reflection session was from 57 minutes to 2 hours and 55 minutes. This cycle was repeated six times in PLC School A and nine times in PLC School B. The complete table that presents the PLC cycles in each of the two schools can be found in Appendix 15b.

5.4.1.3 The role of the researcher as a researcher, the role of the researcher as a facilitator, and teachers in the PLC intervention

The facilitation carried out by a researcher during a PLC conversation is an important aspect of the process and influences the success of each PLC (Salleh, 2016). This was recognised and heeded by the facilitator of this PLC (the researcher). It was important to ensure that teachers' trust was gained during the PLC process so they would feel safe and comfortable to share their feedback honestly. Moreover, it was important that the researcher had awareness of the local culture to ensure the use of correct manners and proper ways of acting. The researcher understood that teachers in both schools belonged to a communitarian or collective society (Hofstede, 2001) where face saving is an important aspect of maintaining harmony (Hofstede, 2001). For this reason, the researcher ensured that the teachers followed the code of conduct they had developed during the PLC discussions. Another aspect of the facilitation was to remind teachers to use the QTF practice guide (NSWDET, 2003) when they referred to any event in the video and to provide their colleagues with evidence and reasons for their evaluation. This process helped teachers avoid misunderstandings as they shared their feedback in the PLC using the common professional terminology of the QTF.

The researcher's role was also that of an expert who shared with participating teachers about research-informed practice and helped them understand that the purpose of the PLC was to improve their teaching quality related to promoting HOT. Teachers were assisted to understand the QTF elements (NSWDET, 2003) and to integrate HOT (Krathwohl, 2002) into their lesson plans. The QTF practice guide was referred to when the teachers were confused about the definition of any element or unsure about how to code an element of the QTF. Table 5.4 provides a detailed outline of the researcher's role and teachers' roles in the PLC.

Table 5.4 Researcher’s role and teachers’ role in the PLC

Occasion	Researcher’s role as a researcher	Researcher’s role as a facilitator	Teachers’ role
Initial workshop for PLC	The researcher prepared resources and materials for initial workshop	The researcher explained the purpose of this session, i.e., leading discussion for developing code of conduct for PLC collaboration, brainstorming, discussing, modelling, and reflecting with teachers about HOT, QTF and PLC concepts. The researcher facilitated the initial workshop.	Teachers learned about PLC and developed a code of conduct for PLC meetings. Teachers learned about HOT concepts; practised designing HOT activities; watching and coding lesson videos using the QTF; reflecting on a lesson video by sharing their individual evaluation using the QTF and then discussed their feedback to decide on group codes for QTF elements.
PLC step 1- Designing lesson collaboratively	The researcher provided resources that teachers needed and recorded PLC cycle every week	The researcher facilitated and explained the purpose of this session, i.e., researcher reminded about the definition of HOT, why HOT is important, how to develop HOT goals and activities in teaching and learning and gave examples on how to develop HOT in general and in EFL lesson planning. The researcher guided the teachers to identify their lesson plans’ learning goals and learning objectives. This was to ensure that the lesson goals and objectives encouraged HOT learning. The researcher facilitated and prompted teachers to include HOT goals, learning objectives and learning activities in their lesson plans. The researcher was available to support and explain to teachers if they had any questions about the HOT and QTF elements.	The volunteer teacher for each PLC cycle chose a topic from the syllabus and shared his/her current lesson plan with the others. The teachers in each PLC group (i.e., in School A and in School B) shared their lesson plans’ learning goals, learning objectives and learning activities with other PLC members in each PLC cycle. The teachers chose the lesson plan goals, learning objectives and designed learning activities collaboratively in order to achieve the HOT goals through working and sharing in a PLC group with guidance from the researcher. The teachers discussed how planned activities contributed to promoting students’ HOT and how the lesson included the QTF elements. The teachers prepared the task quality criteria and teaching resources for learning activities in their

			<p>classrooms in each PLC cycle collaboratively.</p> <p>Each of the teachers shared their own plan of a lesson that they had identified and explained what considerations they had used in designing this lesson to embed HOT. They commented on ways to improve the lesson plan. Other teachers contributed to improving the lesson plan.</p> <p>One teacher wrote /typed up their lesson plan in each PLC cycle.</p> <p>The volunteer teacher taught the prepared lesson with HOT goals and activities in her or his class.</p>
PLC Step 2- Individually teaching the EFL lesson with HOT goals and activities	The researcher video recorded each lesson in each teacher's classroom to be reviewed in each PLC cycle. Then, the researcher made observation notes from the teachers' practice	The researcher explained the purpose of this session, i.e., the researcher explained to each class why teachers were video-recording each lesson and explained the reason for the presence of a camera in their classroom.	
PLC Step 3- Observing the recorded teaching video	The researcher distributed all materials needed for the PLC cycle every week and prepared the lesson video for teachers for each PLC cycle	<p>The researcher explained the purpose of this session, i.e., the researcher distributed the lesson observation sheet and the QTF classroom practice guide to the teachers before each PLC cycle started every week.</p> <p>The researcher played the lesson video and watched the lesson video in the PLC.</p>	<p>The teachers analysed the lesson plan using the revised Bloom's Taxonomy table in order to identify the HOT activities.</p> <p>Teachers watched their own teaching video or their colleague's teaching video collaboratively in the PLC.</p>
Step 4- Coding the lesson video	The researcher played the lesson video for teachers for each PLC cycle	The researcher explained the purpose of this session, i.e., the researcher coded the lesson video using the QTF observation sheet during the PLC cycle independently so it could be used in Step 5.	Teachers individually coded each video by using the QTF observation sheet and QTF classroom practice guide. This would be shared and discussed in Step 5.
Step 5- Reflecting on the taught lesson	The researcher recorded the PLC meeting for each PLC cycle, gathered teachers' lesson plans and collected samples	The researcher explained the purpose of this session, i.e., The researcher facilitated this conversation and encouraged teachers to take turns leading the discussion on the QTF, sharing their codes, and reminding them to follow the	<p>Teachers took turn sharing their observation codes and provided evidence for their feedback on each video by using the QTF guideline.</p> <p>Teachers reflected on the strengths and limitations of the teaching and shared</p>

of student work after each cycle	code of conduct and check the QTF practice guide. The researcher also shared her coding and evidence from her feedback after teachers shared their coding and feedback. The researcher prompted teachers and was available to provide further explanation for teachers if there were questions.	advice/insights for improvement. Teachers shared students' work samples in the PLC and discussed whether these samples illustrated the intended effect, i.e., students' HOT. Teachers discussed the different codes for each lesson video in each PLC cycle and decided collaboratively on a group code for the QTF elements.
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5.4.2 PLC Data collection, preparation and analysis

This section describes the data collection and preparation procedures.

Table 5.5 shows the research questions and the research methods used to collect the data, and the data analysis techniques used in Study 2.

Table 5.5 Research questions, methods and analysis used in Study 2

Research questions	Methods				Analyses			
	Survey Questionnaire	Interview	Classroom observation	Document analysis	Descriptive statistical analysis	Repeated measure ANOVA statistical analysis	ANCOVA statistical analysis	Thematic analysis
1. Has the PLC intervention designed for this study influenced EFL teachers' PCK? If so, in what way?		✓	✓	✓		✓		✓
2. Has the PLC intervention designed for this study influenced EFL teachers' PCK related to their beliefs and attitudes about teaching HOT, and their beliefs about students' ability to learn HOT in rural schools? If so, how?		✓	✓	✓				✓
3. Has the PLC intervention designed to improve EFL teachers' PCK influenced teachers' instruction to promote HOT? And if so, how/in what way?		✓	✓	✓		✓		✓
4. How does the teaching of HOT influence rural students' use of HOT in EFL classes?				✓				✓
5. How useful is the QTF for structuring a professional learning intervention in the context of Indonesian schools in terms of promoting teachers' respectful communication and reflection on lesson planning and teaching?		✓						✓
6. Is the use of video-based discussion for EFL teachers' critical reflection on their practice an effective approach in a PLC? If so, in what way?		✓						✓

5.4.2.1 Interviews

5.4.2.1.1 Interview participants

The PLC participants were five EFL teachers who had been interviewed in Study 1.

4.5.2.1.2 Interview procedure

One-on-one interviews (see Chapter 3) were conducted. The same interview procedure was employed in Study 2 as in Study 1. Some questions in Study 2 were the same as questions in Study 1 (see Table 4.3 in Chapter 4). There were some additional questions in Study 2 relating to teachers' PLC experience. Examples of questions used in the Study 2 interviews are presented in Table 5.6. Full interview questions can be found Appendices 4 and 5.

Table 5.6 Examples of interview questions in Study 2 based on Gore et al. (2016, pp. 62-63)

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4.5.2.1.3 Interview data preparation

Study 2 interview data were prepared in a manner described in Chapter 3. Interview data for Study 2 were identified using POST1 and teachers' names.

4.5.2.1.4 Interview data analysis

Thematic analysis was used to analyse the interview transcripts in NVivo version 12 (QSR, 2018) as described in Chapter 3. This was done to find the patterns and the themes from the data (Creswell, 2012). The steps of data analysis were the same as for Study 1, guided by recommendations from Creswell (2012).

5.4.2.2 Observations

4.5.2.2.1 Observation participants

The teaching practice of the five EFL teachers from Study 1 was observed and video recorded three times for each teacher as they taught in their regular classrooms.

4.5.2.2.2 Observation procedure

Classroom observation procedure (see Chapter 3) was the same as in Study 1 (Chapter 4). One lesson video per week was observed. It was carried out as Step 3 in each PLC cycle across six weeks in School A and nine weeks in School B.

4.5.2.2.3 Observation data preparation

For each lesson, observation data were coded using the QTF observation coding sheets. Data from observation coding sheets by teachers and researcher's notes from observing lessons in the class were gathered, checked and entered into SPSS program version 25 (IBM, 2018). Five time points of lesson observation data were input to the SPSS program from 5 PLC participants. Time one (T1) and Time two (T2) were taken from the pre-intervention observation and Time three (T3), Time four

(T4) and Time five (T5) were taken from the immediate post-PLC intervention observations across six and nine weeks.

4.5.2.2.4 Observation data analysis

A repeated measures ANOVA (Field, 2009) was employed to analyse the lesson observation data within 5 teacher subjects with 5 time points of observation. This test provided information on changes between the five observation points for the five PLC teacher participants. The SPSS version 25 (IBM, 2018) program was used to analyse observation codes to identify whether there had been significant changes in teachers' PCK and teaching practices before and after the intervention. With only a small number of participants in the PLC intervention (5), normality checks were hard to determine, therefore parametric and non-parametric tests were conducted (Field, 2009).

5.4.2.3 Document collection

5.4.2.3.1 Document collection data procedure

Document collection procedure was the same as in Study 1.

5.4.2.3.2 Document collection data preparation

The documents were prepared using the same method as in Study 1.

5.4.2.3.3 Document collection data analysis

The documents were analysed in the same way as Study 1. Table 5.7 details the document analysis for lesson plans.

Table 5.7 PLC intervention lesson plan analysis: Learning activities planned in PLC cycles and implemented in the classroom

Teachers	Topic of the lessons	Lesson activities					
		Remembering	Understanding	Applying	Analysing	Evaluating	Creating
Petrus	Descriptive text 'House' (lesson 1)	Describing student's own house (planned in PLC; implemented as observed)	Explaining the functions of parts and rooms in the house; providing reasons for the proposed concept of their house (planned in PLC; implemented as observed)	Writing a text about parts of their house and presenting students' group work (planned in PLC; implemented as observed)	Differentiating between their traditional and modern houses (planned in PLC; implemented as observed)	Evaluating the advantages and disadvantages of traditional and modern houses using the checklist and group discussion (planned in PLC; implemented as observed)	Producing a house concept that combines traditional and modern styles (planned in PLC but not implemented)
	Recount text 'Personal experience' (lesson 2)	Remembering students' past activities (planned in PLC; implemented as observed)	Explaining their past experience (planned in PLC; implemented as observed)	Answering questions about their holiday and presenting using 5 W (what, when, where, who, and why) and 1H (how): What did you do yesterday? Why did you do that yesterday? Who was with you when you did it? How did you do it? Where did it happen? When did it happen? How do you feel about it?	Analysing student writing using the 5Ws and 1 H checklist to make sure they include all information based on the questions (planned in PLC; implemented as observed)	Checking the writing and confirming the accuracy of the story and providing questions related to the text (planned in PLC; implemented as observed)	*Writing their experience or activities from their holiday using the 5Ws and 1H mind mapping and using past tense (planned in PLC; not implemented as observed)

	Report text 'News' (lesson 3)	Remembering events around them for news content (planned in PLC; implemented as observed)	Understanding the structure and content of news (planned in PLC; implemented as observed)	(planned in PLC; implemented as observed) Asking and giving opinions about the news (planned in PLC; implemented as observed)	Analysing the content of the news using 5Ws and 1H questions (planned in PLC; implemented as observed)	Evaluating the news content based on the criteria (planned in PLC; implemented as observed)	*Writing and reporting news or events from their surroundings (planned in PLC; implemented as observed)
Diana	Asking and giving information about people (lesson 1)	Giving information about themselves and their family: using expression of asking for and giving information (planned in PLC; implemented as observed)	Asking and giving information about themselves and their family: using expression of asking for and giving information (planned in PLC; implemented as observed)	Providing information about other people in their lives through interviewing their peers for personal information (planned in PLC; implemented as observed)	Analysing the information provided by their peers through interviews (planned in PLC; not implemented as observed)	Evaluating the accuracy of the information that they received from others: students cross checked and confirmed the accuracy of data they received about their peers using true or false fact check (planned in PLC; implemented as observed)	*Writing a report relating to the information that they gained from interviews with their friends (planned in PLC; not implemented as observed)
	Asking and giving information about	Identifying things around their house: what does the house look like?	Providing explanations about the functions and the reasons for using various	Practising to use and answer different questions relating to their house within	Differentiating household items in Indonesian and Australian houses based	Evaluating other students' ideas of suitability of their house concepts to the local climate	Producing a house concept that would be suitable for the local climate (planned in PLC;

houses (lesson 2)	(planned in PLC; implemented as observed)	household items in Indonesian and Australian houses: how the house compares to this one? what do you think of a typical kitchen in Indonesia and in Australia? (planned in PLC; implemented as observed)	their group work (planned in PLC; implemented as observed)	on pictures that teacher provides in group: What makes Australian kitchens different from Indonesian kitchens? Why is the Indonesian bedroom different from an Australian bedroom? Are there any differences between your current house and your dream house? (planned in PLC; not implemented as observed)	(planned in PLC; not implemented as observed)	not implemented as observed)
Descriptive text about endangered animals (lesson 3)	Identifying animals around Indonesia (local animals) (planned in PLC; implemented as observed)	Asking and giving information about animals based on pictures: What do you know about Komodo dragon? What do you know	Presenting the information and ideas to protect the animals that they find from researching (planned in PLC; implemented as observed)	Watching videos about the Komodo dragon and sea turtles: Finding information about the animals and analysing the information to	Evaluating information related to local animals: How do you feel or what do you think about the current situation related to Komodo dragon	Providing solutions to problems related to protecting local animals in Indonesia especially in the island; What are the solutions that you could provide

			about the sea turtle? (planned in PLC; implemented as observed)		find out the characteristics, features and the current state of the Komodo dragon and sea turtle: what is happening with Komodo? What is happening with sea turtle? What local practices are endangering the animals? What are the strengths and weakness of the solutions given by your friends? (planned in PLC; implemented as observed)	endangered status and sea turtle endangered status in Indonesia? What are the benefits of Komodo dragon endangered status and conservation? What is the negative side of not looking after those local animals? (planned in PLC; implemented as observed)	to preserve the animals? (planned in PLC; implemented as observed)
Melinda	Descriptive text 'describing a house' (lesson 1)	Mentioning different parts of a house (planned in PLC; implemented as observed)	Explaining the functions of parts of a house (planned in PLC; implemented as observed)	Presenting their group work: the differences between houses and strengths and drawbacks of the houses (planned in PLC; implemented as observed)	Analysing the differences between a traditional house and a modern house (planned in PLC; implemented as observed)	Evaluating the advantages and disadvantages of a traditional house and a modern house (planned in PLC; implemented as observed)	*Creating a house concept using the positive features of traditional and modern houses to tackle the climate change problem (planned in PLC; not implemented as observed)

	Recount text (lesson 2)	Reading a recount text (planned in PLC; implemented as observed)	Understanding recount text structure (planned in PLC; implemented as observed)	Writing a recount text about students' personal experience using 5Ws and 1H, using conjunctions and past tense (planned in PLC; implemented as observed)	Analysing the recount text structure and past tense verbs in the text and answering 5Ws and 1 H questions relating to recount text (planned in PLC; implemented as observed)	Evaluating a recount text about students' personal experience using 5Ws and 1H, using conjunctions and past tense (planned in PLC; not implemented as observed)	*Creating a compilation of students' personal stories to be shared with others from different classes as a book or magazine (planned in PLC; not implemented as observed)
	Recount text (lesson 3)	Reading a recount text (planned in PLC; implemented as observed)	Understanding recount text structure (planned in PLC; implemented as observed)	Writing a recount text about students' personal experience using 5Ws and 1H, using conjunctions and past tense (planned in PLC; implemented as observed)	Analysing the recount text structure and past verbs in the text and answering 5Ws and 1 H questions relating to recount text (planned in PLC; implemented as observed)	Evaluating a recount text about students' personal experience using 5Ws and 1H, using conjunctions and past tense (planned in PLC; not implemented as observed)	Creating a compilation of students' personal stories to be shared with others from different classes as a book (planned in PLC; not implemented as observed)
Steven	Descriptive text 'Asking and giving information' (lesson 1)	Mentioning different parts of rooms in schools, their functions and objects inside	Discussing their answers with other groups (planned in PLC; implemented as observed)	Matching words and rooms function (planned in PLC; implemented as observed)	Analysing the differences between rooms and their functions in their school and other	Evaluating the different rooms in a school and providing suggestions for improvements to maximise	Providing creative ideas for improving the school library and its services in their schools (planned in PLC;

	the rooms (planned in PLC; implemented as observed)			schools based on pictures (planned in PLC; not implemented as observed)	their functions: What do you think about ways to improve the library in our school? Which one is a better room for studying in? Why it is better for studying in? (planned in PLC; not implemented as observed)	not implemented as observed)
Asking and giving directions about public places (lesson 2)	Recalling local public places (planned in PLC; implemented as observed)	Understanding different words to ask and give directions (planned in PLC; implemented as observed)	Using the expression of asking and giving directions, drawing and presenting a map of local public places (planned in PLC; implemented as observed)	Analysing the map that the students have drawn as a group and answering the questions: How do you get to the police office from your school? How do you get to the school from the church? How do you get to the local clinic or hospital from your school? How do you get to the	Checking other students' answers to the questions about directions using the criteria that the teacher has shared (planned in PLC; implemented as observed)	*Drawing a map of local public places in groups (planned in PLC; implemented as observed)

					district office from your school? (planned in PLC; implemented as observed)		
	Schedule (lesson 2)	Remembering students' lesson schedule in school (planned in PLC; implemented as observed)	Understanding different words related to schedules: different subject names in English and times in English (planned in PLC; implemented as observed)	Giving information about schedules by labelling activities on the poster in front of the classroom; Students create their own schedule for study or daily activities using questions: What do you do on Monday? How long will you do it? Why do you do it? How do you do it? Is someone helping you? (planned in PLC; implemented as observed)	Analysing the lesson schedule using questions: what time is English class? How long is the lesson? What is the topic of the lesson? What day is the lesson? (planned in PLC; implemented as observed)	Checking other students' schedules using the criteria that the teacher has provided (planned in PLC; implemented as observed)	No activities planned at this level
Ruben	Invitations (lesson 1)	Recognising different types of invitations (planned in	Identifying and understanding verbs, the structure and the language in	Students present their invitations to their peers (planned in PLC;	Analysing the content and the structure from different types of	Exchanging and evaluating the quality of invitations from different groups	*Designing and creating an invitation in groups (planned in PLC;

	PLC; implemented as observed)	invitations (planned in PLC; implemented as observed)	implemented as observed)	invitations (planned in PLC; implemented as observed)	using invitation criteria from the teacher (planned in PLC; not implemented as observed)	implemented as observed)
Prohibition (lesson 2)	Recognising different types of prohibition signs or notices (planned in PLC; implemented as observed)	Identifying and understanding the language used in prohibition signs or notices (planned in PLC; implemented as observed)	Presenting prohibition signs or notices to their peers (planned in PLC; implemented as observed)	Analysing the prohibitions notices and content using 5Ws questions: What does the prohibition mean? Where can you find it? Why do people put prohibition signs there? What are the consequences of ignoring the signs? Who are the target audience of the signs or notices? (planned in PLC; implemented as observed)	Evaluating the school regulations; discussing the prohibitions and consequences for breaking the regulations; evaluating the benefits of the prohibitions for students and disadvantages of the prohibitions for students in school (planned in PLC; implemented as observed)	Designing and creating prohibition signs and notices based on school regulations to encourage other people to pay attention to the problems in schools in a way that hasn't been done before (planned in PLC; implemented as observed)
Asking and giving permission (lesson 3)	Recognising different expressions to ask and give	Understanding the language used to ask and give permission;	Presenting their permission letters to their peers (planned in PLC;	Analysing the content of a permission letter using 5Ws and 1H	Checking and evaluating the content of other students' letters that ask and	Drafting a template of letter of permission to be used in the school widely because the

permission based on pictures (planned in PLC; implemented as observed)	Identifying a structure from a letter to ask and give permission (planned in PLC; implemented as observed)	implemented as observed)	questions; Writing a reply letter using correct forms of asking and giving permission expression (planned in PLC; implemented as observed)	give permission using the task criteria (planned in PLC; not implemented as observed)	school does not have any template that students can follow at the moment (planned in PLC; not implemented as observed)
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It is important to note that the *activities shown in the creating column of the table are either not examples of creative activities or seem to interpret 'creating' to mean 'draw up'. This issue will be discussed in Section 5.5.4

5.5 Findings

This section reports findings from PLC intervention data from interviews, classroom observations, and document analysis.

5.5.1 PLC intervention influence on PCK

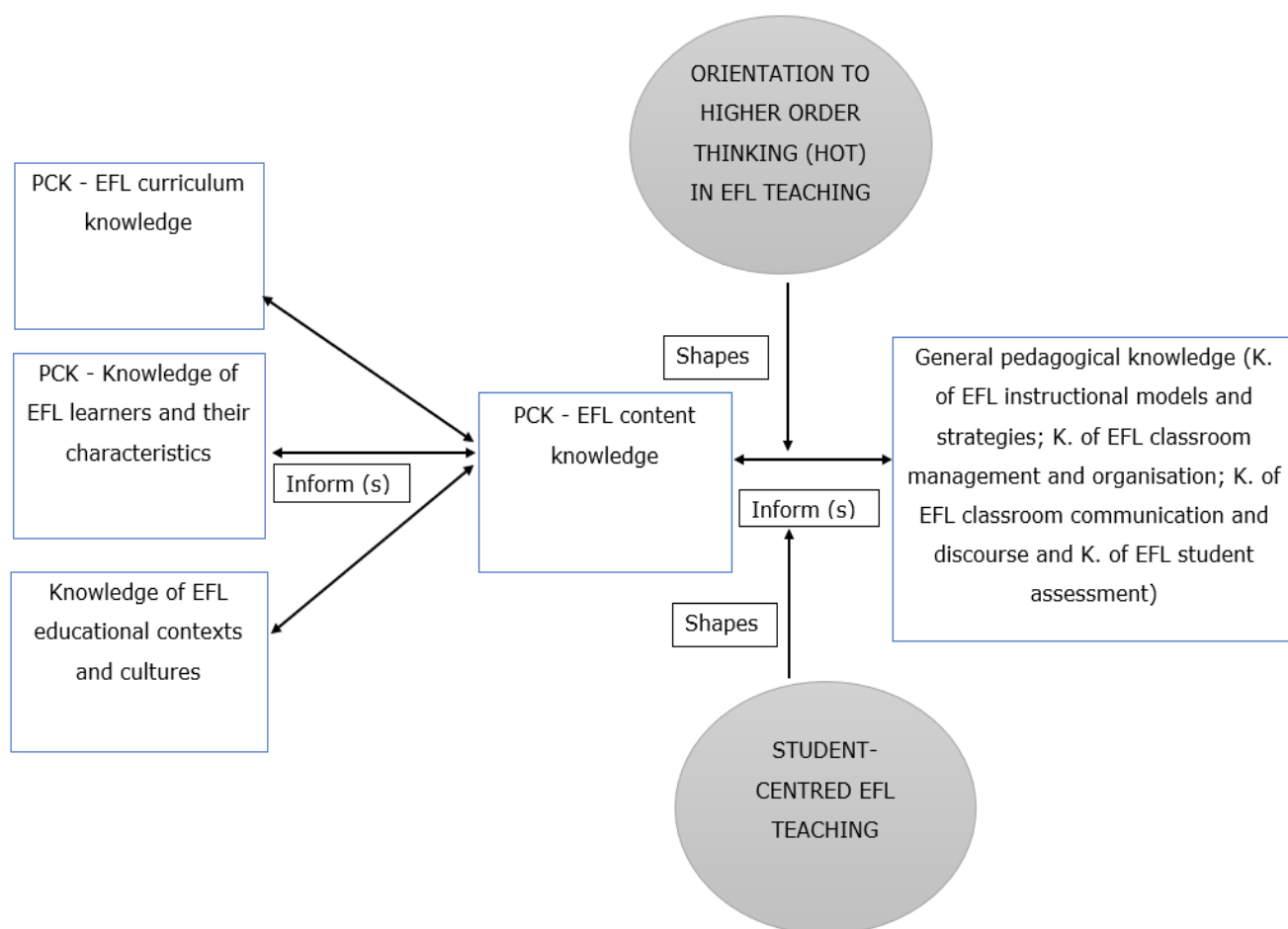
This section reports on findings from interviews, observations and document analysis to answer the research question (RQ 1) about the influence of a PLC on EFL teachers' PCK. The interview data were organised based on the PCK components.

5.5.1.1 PLC intervention: EFL teachers' PCK

This section presents findings related to EFL teachers' PCK after the PLC intervention. The PLC intervention provided opportunities for teachers to develop their PCK-Curriculum knowledge (Curk), PCK-Knowledge of learners and their characteristics (KLLC), and PCK-Knowledge of educational context and culture (KECC) and this in turn informed their PCK-Content knowledge (CK) which informed their PCK-General pedagogical knowledge (GenPK).

These different PCK components had intertwining relationships and influenced one another. Teachers considered different aspects of knowledge categories in their lesson planning, teaching, observing lesson videos, coding the videos and reflecting on their own and others' teaching practices as the result of their PLC collaboration. Figure 5.2 shows the integration of EFL teachers' PCK components. This model was developed based on the existing model of the nature of integration among PCK components (Aydin & Boz, 2013, pp. 620-622).

Figure 5.2 PLC intervention: PCK components integration in EFL teaching



As presented in the following sections, observations showed that the PLC resulted in teachers adopting a more student-centred teaching approach where they aimed to develop some elements of HOT in EFL learning as observed in the classroom and learning activities used in lesson plans. Although many of the activities still drew on LOT, the teachers had moved forward in adopting a more student-centred approach than had been observed in their pre-intervention lessons.

5.4.1.3.3 PCK-EFL Content knowledge (PCK-CK)

Deep Knowledge (DK)

After the intervention, for example, Ruben showed progress in his DK throughout his first, second and third lessons. Lesson observations showed that he was able to explain important key concepts of the

lessons. In the post-intervention interviews all teachers showed that they could explain the relationships between the concepts taught within their lessons. Ruben also shared in his interview that he had developed a better understanding of topics he taught by describing how he showed students the way the main topic connected with other topics:

For example, from the third teaching practice, the main topic for learning is to ask for permission. So, we connect the lesson to the use of modal auxiliary verbs to ask and give permission. Therefore, we learn about modal auxiliary verbs and how they can be used in a positive form, negative and interrogative forms. The students know how to ask permission, to give permission and to decline permission. Also, I explain to the students that permission can be connected to verbal and written permission through letters. So, then we learn how to analyse a permission letter by using 5 Ws and 1 H. So, in order to comprehend the letter, the students can use the 5Ws and 1 H to give an appropriate response to the letter. (Ruben, POST1)

Lesson plans and observations showed that teachers had developed stronger content knowledge in comparison to that demonstrated before the PLC intervention. They showed some evidence of being able to elaborate their content knowledge and make connections between key concepts and they were able to draw on their knowledge of curriculum as they planned their lessons (see Appendix 21). Their ability to do this had improved during the PLC. Findings from the analysis of interviews, lesson observations, collaborative discussion and reflections indicate that teachers had progressed in their DK and showed a clearer understanding of the connections between PCK-CK and PCK-CurrK which contributed to the quality of the content they included in their lessons compared to pre-intervention.

Metalanguage (ML)

The teachers showed that they integrated metalanguage throughout their lessons. For example, Petrus explained sentence structure by saying:

I teach the sentence structure for past tense, how they could create a piece of writing about their life experience in past tense,

what type of verb they have to use in simple past tense. Is it verb two or verb three? What about 'to be' (am, is and are)? What could they use to write something in the past, was or were? Which subject is correct to use? (Petrus, POST1)

This element was more observable in Petrus' second and third lessons than in the first lesson. Petrus gave a detailed explanation of the use of past tense of verbs in his second and third lessons, and this enabled students to write about their past experience and report events around them by writing news.

Overall, findings from the analysis of interviews, lesson observations, collaborative discussion and reflections indicate that teachers had progressed and were able to provide more explanations in their lessons relating to the aspect of ML in comparison to observations of their pre-intervention lessons (see Appendix 21).

Teachers in these PLCs showed that they were progressing in being able to integrate into their lessons their content knowledge related to metalanguage; they were making explicit connections between their PCK-CK and PCK-CurrK. This development is related to the feedback and suggestions made in their PLC collaboration by their colleagues and the PLC facilitator (researcher).

5.4.1.3.3 PCK-EFL general pedagogical knowledge (PCK-GenPK)

This section explains findings related to changes in teachers' PCK-GenPK as a result of their participation in the PLC intervention.

Knowledge of EFL instructional models and strategies

This section reports findings related to changes in teachers' knowledge of instructional strategies to teach EFL topics during the PLC intervention.

Higher Order Thinking (HOT)

The teachers showed some progress in their knowledge of HOT concepts and HOT activities after participating in the PLC intervention. However,

each teacher showed different degrees of progress throughout the PLC cycles. For example, Diana developed a basic knowledge of HOT and explained that she started to consider incorporating HOT in her lessons:

I think HOT is when the students can analyse the topic of the lesson which was given to them, then to describe and also to create... The task that they have done is to provide a solution for how to protect the Komodo dragon and sea turtles. (Diana, POST1)

Diana showed that she considered aspects such as analysing the topic of a lesson, evaluating information, and producing or creating solutions to a problem during her interview and her planning of her three lessons in comparison to her pre-intervention lessons. However, it was observed that when she implemented her first and second lessons the students were only involved in low order thinking/LOT activity (remembering, recalling information) (as shown in Table 5.7). Although she thought she had provided students with HOT activities, it can be seen that the questions were focused on and encouraged LOT. It was observed that, on some occasions, there was some HOT activity as demonstrated by some students checking their friends' answers or confirming and evaluating the answers (lesson 3). The PLC suggested that she could have provided more opportunities for students to learn about HOT if she had asked them to provide solutions to problems about conservation of endangered animals (third lesson). Diana could have added some HOT questions so that students would be able to evaluate information that came from their interviews (first lesson). Although Diana showed some improvement in her knowledge of HOT and this was a first step toward developing this aspect of HOT, it could be recommended that more professional learning targeting her understanding of HOT would be beneficial. She seemed to be doing what the researcher had modelled while not engaging with the processes involved. This indicated that she needed more time to develop her understanding of the concept of HOT.

During the three PLC cycles, teachers could reflect on and notice in their teaching videos areas of their practice that needed improvement. Feedback from PLC colleagues and the researcher also assisted their reflections. This shows that the PLC collaboration was contributing to the development of some HOT knowledge in these teachers in comparison to their pre-intervention lessons. There was some misinterpretation of the word 'creating' as 'drawing up' in their planned activities (see Table 5.7), which could be due to this PLC being the teachers' first professional learning about HOT concepts; they were in their early stages of developing their knowledge of HOT concepts.

Findings from the analysis of interviews, lesson observations, collaborative discussions and reflections indicate that teachers had made some progress in their knowledge of HOT and were showing more evidence of translating their PCK of HOT into aspects of their lesson planning than they had before the intervention (see Appendix 21). However, teachers showed their misunderstanding of 'create' in their lessons (see Table 5.7). It is important to note that some activities shown in the 'creating' column of Table 5.7 were either not examples of creative activities or seemed to interpret 'creating' to mean 'draw up'. This misconception of 'creating' showed that more time was needed for teachers to develop their understanding of creativity and to help them differentiate between asking students to create/draw up something and asking them to bring together ideas they had learnt about in order to solve a problem or develop something very new, i.e., creating. It was clear that more professional learning would be needed to build teachers' confidence for implementing planned HOT activities especially in the area of creating.

Student Direction (SD)

Teachers showed they were developing their knowledge about the value of providing choice or freedom for students to choose tasks, and the time and pace of their learning. However, they found it difficult to change their

practice from teacher-directed to student-directed because this concept was new to them; such big changes take time. They managed to provide some degree of choice for students in terms of allowing them to negotiate the time taken to do learning tasks.

For example, Melinda shared: “there is freedom. It is to give the opportunity to choose for example, how many minutes to spend to do the task, then time for the students to discuss” (Melinda, POST1). Melinda’s comment shows that she began to consider students’ voice on the amount of time they would like to spend doing an activity or conducting a group discussion. In her first lesson she allowed little SD even though she provided students with options to choose whose house to describe for the group task. In her third lesson it was observed that she provided more flexibility with time, indicating that she was valuing SD more than she had before the intervention. She still needed to develop her knowledge and understanding of SD for student learning.

Overall, findings from the analysis of interviews, lesson observations, collaborative discussion and reflections indicate that four of the five EFL teachers tried to give students some options to choose activities or the amount of time spent on them, but their limited knowledge of SD constrained opportunities they gave students for choice or negotiation (see Appendix 21). These teachers would benefit from more professional learning focusing on developing their knowledge and understanding of SD in students’ learning.

Connectedness (CN)

The teachers showed that they considered, planned and implemented some connections between classroom learning and aspects outside the classroom after participating in the PLC. For example, in Diana’s first lesson on asking and giving information about people, she tried to connect her lesson with the outside world but she did not explore those connections with students by using follow up discussions to clarify the

connections she was making. However, in her second lesson it was observed that she did not make any explicit connections between the lesson and the outside world (see Table 5.7). In her third lesson she made an explicit connection between what the students learned about the issue of animal conservation and ways they could contribute to it. For example, Diana shared:

For example, the lesson on the sea turtles, if they share it with their parents or their other friends maybe who catch sea turtles: 'please don't catch the sea turtles again, because our teacher explained that it takes almost forty years for sea turtles to grow to maturity and then they are taken. So, it takes a long time for them to reach adulthood and the sea turtles also are weak animals.' (Diana, POST1)

She explicitly encouraged students to share what they had learned with an audience outside the classroom and encouraged them to advocate for the protection of sea turtles, which is important because it is a popular cultural practice to wear sea turtle shells as accessories such as rings, bracelets, or combs. In this way she raised students' awareness of the need to protect the endangered sea turtles. The PLC discussions contributed to progress in her knowledge of the importance of making connections between her lesson content and the outside world. However, as shown in the quotation, she still needed some time to develop deeper understanding of this element for her teaching.

Overall, findings from the analysis of interviews, lesson observations, collaborative discussion and reflections indicate that participation in the PLC had helped teachers make some progress in their knowledge of CN (see Appendix 21), however more time would be needed for them to develop their understanding of the value for students of making connections between their classroom learning and the real world.

Knowledge of EFL classroom management and organisation

Engagement (EG)

The findings showed that after the intervention some teachers employed group work with small projects to encourage student engagement in learning. The teachers employed this approach alongside providing students with explicit task criteria designed to encourage them to engage more in their learning. Observations showed that Petrus employed group work in his three lessons. In his first lesson students did not engage as actively in small group discussions as they did in his second and third lessons. This approach seemed to help students focus on their learning and to reduce disruptive behaviour. Similarly, the other four teachers divided students into small groups to do learning tasks and gave them explicit criteria to help them understand what to do. It was observed that students' engagement increased when they were given different roles in small groups and provided with individual support as they worked.

Diana explained that she used small group discussions where she required that each student answer a question:

So, every child in each group has responsibility on the given task. Every student should answer a question for example, there are ten questions and there are three or four students in each group, the questions can be divided into two or three questions for each student to answer. So, they have responsibility to answer one to three questions and then collect answers to be submitted as their group work. (Diana, POST1)

Diana's comment focused on the way she gave students responsibility in groups rather than on opportunities for them to learn by active participation. She did not employ corporal punishment in her approach in the classroom. Students' engagement was observed to be inconsistent, with some students seeming to be passive in the classroom and waiting for the teacher to check their work before they would continue with a learning task. During Step 5 of the PLC cycle, other teachers suggested that Diana should supervise the students' work consistently to ensure that

students engaged actively in learning. The teachers would need more time to learn positive strategies for engaging their students in lessons; future professional learning focusing on EG could assist them with this.

Although observations showed that the teachers progressed in their knowledge of how to engage their students through group work, which also reduced off-task behaviours during lessons, it was clear that they would need more time to develop their knowledge of other strategies to increase students' active participation in lessons (see Appendix 21). Having this knowledge could decrease their reliance on coercive classroom management approaches (as reported in Chapter 4, i.e., threats and violence) and focus on EG. Through their participation in the PLC, teachers were able to begin to address the issue of corporal punishment in their classrooms, showing the potential of a PLC to address issues such as this within schools.

Social Support (SS)

The teachers showed that they employed praise to encourage students' learning while also employing some corporal punishment. For example, Steven was observed to employ corporal punishment in his first lesson when he slapped a student. During the PLC discussion, Ruben and Melinda commented on this and said that slapping students was concerning. They suggested that it would be better to provide students with feedback than to use physical punishment. In his second lesson, he gave positive encouragement to students and later in the PLC discussion he shared that he had progressed in his teaching and said he felt this was the first time that he felt like a professional teacher and performed really well. In his third lesson, he was observed to employ corporal punishment again by slapping a student who played around. In the PLC discussion following the lesson, Ruben and Melinda suggested that Steven should use a softer approach to discipline with this student in the future. However, Steven justified his actions by saying that the student would pretend to do the task when he was around but when he moved to the next group he

played around again and for this reason he punished him. This showed that Steven was in need of more professional development focused on positive classroom management.

The contrasting approaches used by the teachers showed that they could benefit from learning more about ways to discipline students in a positive way through social support (see Appendix 21). When the issue of corporal punishment was discussed in the PLC, teachers who used this type of discipline recognised that it was not the best way to manage the classroom but explained that they used it because they lost their tempers.

Overall, based on conversations in the PLC, lesson plans and their implementation in the classroom and the quality of conversation in interviews, it was found that Diana, Melinda and Ruben had progressed in their knowledge of how to provide social support for their students and create a positive learning atmosphere in comparison to pre-intervention observations (see Appendix 21). They were beginning to learn how to use positive affirmations and show appreciation for students' participation. However, Petrus and Steven showed underdeveloped PCK related to their knowledge of classroom management. They learned alternative ways to manage behaviour in the PLC but still practised corporal punishment in their classrooms, indicating that it takes time to change entrenched behaviours.

Students' Self-Regulation (SSR)

Teachers shared that they had learned in the PLC some strategies to attract students' attention to lessons and to regulate students' behaviours. For example, in his first lesson, Petrus was observed to employ ear pulling to regulate students' off task behaviours. During the PLC discussion following his lesson, this issue of corporal punishment was discussed and addressed. Petrus said in his interview after all PLC cycles:

To manage the behaviour to focus on the main topic of the lesson today, I often ask them... For example, in this lesson no one is

expected to be noisy, if you are noisy, we will not understand the main topic of the lesson that we will learn properly, therefore I will count from one to three such as "one, two, three no one make any noise". Therefore... they will take part in group work, which means they can regulate themselves because they have followed my instructions. (Petrus, POST1)

In his second lesson Petrus was observed to help students to regulate themselves by re-arranging seating and placing students in particular groups before a lesson started. He also used numbers to give a sign to students to be quiet when he was talking and he made his expectations clear, which helped students' self-regulation as reflected in students' active engagement in group work (e.g., they were analysing news in the third lesson, and evaluating differences and similarities between modern and traditional houses) without major disruptive behaviours. The PLC discussion contributed to Petrus' knowledge of another strategy he could use to regulate students' behaviour in the classroom and restrained him from using corporal punishment (see Appendix 21). It would take time though for students to internalise these self-regulating behaviours.

All teachers showed some progress in their knowledge of SSR, as shown by giving students different roles during group work to encourage their active involvement in their learning, assigning students to pre-organised groups before the lesson started in order to avoid disruptions and informing them of expected behaviours explicitly. They also prepared relevant learning resources for their lessons as a way of motivating students to participate in learning. This was useful for reducing off-task behaviour because students were interested to do learning activities. These strategies were new to the teachers and they would need more time to learn alternative strategies for developing students' self-regulation so they would be able to manage their own behaviour.

Inclusivity (IN)

The teachers showed that they considered inclusivity in their teaching after the PLC intervention by putting students in heterogenous ability groups:

My way to include students who come from different backgrounds, I don't see that student A is more handsome than student B or student A is richer than student B or student A is smarter than student B. I consider all students have to work together to elevate their ability, if any of them have more ability than the others, they should help their classmates. Don't consider yourself to be better than others. (Petrus, POST1)

Petrus described inclusion of all students in terms of seeing them as equals. Observation showed that during his first lesson he involved students from different groups in most of the lesson activities, although some were more involved than others, while in his second and third lessons all students appeared to be involved actively. This showed that Petrus had progressed in his knowledge of promoting inclusivity and valued IN more by his third lesson than he had before the intervention.

Overall, the teachers in these PLCs were becoming more aware of the importance of including all students in the design of their lessons. They mostly employed cooperative learning strategies to engage students from different backgrounds and levels of academic achievement. However, they would need more time to learn about other inclusive strategies to involve students in their lessons.

Knowledge of EFL classroom communication and discourse

Substantive Communication (SC)

Teachers developed small group projects for students in their classes that encouraged extended and meaningful discussion in their classrooms. For example, Petrus shared:

I give opportunity for them to discuss in groups. I always motivate them not to be shy to explore what they want to know, this is the process of learning... For example, there are students who present their written work about their personal experiences, there are some students who don't read well, so I encourage them to read louder and not to be afraid. (Petrus, POST1)

Petrus used relevant or real-life topics for learning activities and provided opportunities for the students to share their answers from group work in the classroom. He interacted with his students in group settings and had dialogue with them, but it was observed that this type of communication was not sustained throughout his first lesson. SC was evident in his second lesson where communication was sustained between teacher and students and among students in their group discussion. It was observed that students chatted to each other about their stories and asked questions. However, in his third lesson, the communication between teacher and students was short and brief during the lesson and the pattern was limited to instruction, response and evaluation only (IRE). Although Petrus had progressed in his knowledge of SC, he still needed time to develop deeper understanding of strategies to develop it. Further professional learning could help him with this.

Observations showed that the teachers supervised groups and students were taking the opportunity to ask questions related to their learning. The students seemed to enjoy working together and engaged in meaningful communication to produce invitations, notices and letters; they showed a willingness to share ideas and cooperate with each other. Although the PLC discussions enabled teachers to share ideas and the researcher provided some input on activities that would encourage students' communication in learning (Table 5.7), these teachers needed more time to develop their knowledge of SC (see Appendix 21).

Observations indicated that the PLCs were contributing to progress in teachers' knowledge of SC, but it was clear that teachers needed more time to develop their knowledge and understanding of classroom

instructional strategies they could use to promote student participation in learning activities.

High Expectations (HE)

Teachers provided opportunities for students to present their group work to their peers in the classroom and praised them for their performance.

For example, Ruben shared:

So, I do not just give the students a task and then just let them do it alone without giving any support to them. So, I give them support, even though it is exhausting to do it or it might look like I spoilt them. But I try to do it, so they could have willingness to do the task and continue to finish it. I try to give praise to them such as 'very good!', 'okay good!', 'Continue, continue it!' So, there are some students who when getting those praise words, feel they are getting good support and they will make the effort again. Also, it can be given through physical contact such as a small tap on the shoulder, so they feel there is no gap between them. (Ruben, POST1)

Ruben provided students with challenging tasks during his lessons and emphasised giving them support to ensure they could finish their assignments. In his three lessons, many students participated in a challenging task in half of each lesson to design, analyse and write their own invitations and prohibition notices (Table 5.7). It was observed that the teacher visited different groups to help students finish the learning task. Ruben had shown positive progress in HE throughout his three lessons as result of his participation in PLC cycles. He clearly communicated to students his lesson instructions and expectations; this was an improvement on his pre-intervention lessons.

Overall, teachers showed progress in their knowledge of HE in comparison to pre-intervention lessons, but they needed time to develop deep understanding in order to implement HE effectively in their lessons (see Appendix 21).

Narrative (NR)

Observation of Diana's first lesson showed that no narrative was used. In the PLC discussion, other teachers suggested that she could use a short biography in her lesson on asking and giving information about people. In her second lesson Diana used a brainstorming question rather than a narrative to explain her lesson. She showed some progress in using narrative in her third lesson where she used relevant stories about animal protection to help students make connections between what they knew and what they were about to learn. After all PLC cycles had been completed, Diana commented:

The way I explain to the students about the lesson is by telling stories. For example, in the lesson on describing people, I tell a story about a person, someone's experience, and maybe connect it with the experience. I share a story about someone, the name is this and then the job is this, then I make the story from the experience. Also, I share about the Komodo dragon; Komodo dragons live in a particular island and so on (Diana, POST1).

Diana talked about using stories about the Komodo dragon and sea turtles in her lessons in order to make students aware of the importance of protecting those local animals from extinction. She had progressed in her knowledge of NR, but she needed more time to develop her understanding of the value of narrative and learn ways to implement it in her teaching. Overall, four of the teachers were able to employ some types of familiar narrative or stories related to topics they were teaching to gain students' attention and promote their interest in learning new topics (see Appendix 21).

Findings from PLC conversations, lesson plans, observations of lesson implementation and in interviews showed that teachers had made some progress in developing their knowledge of classroom communication and discourse that would encourage students' active engagement in their learning in comparison to the pre-intervention lessons. However, it was clear that they would need more time and professional learning focusing

on their knowledge of SC, NR and HE to develop further their classroom communication and discourse.

Knowledge of EFL student assessment

Teachers developed knowledge of making quality criteria explicit, as a result of the PLC intervention.

Explicit Quality Criteria (EQC)

All teachers tried to provide students with the task criteria in an explicit way. In the PLC they collaboratively designed task criteria for their students to use in their lessons. For example, Steven changed his perspective on giving task criteria to students after all PLC cycles had been completed:

The teacher should prepare criteria for students' learning in every lesson. The purpose of the learning is the students are able to understand or to gain knowledge through criteria or the goal of their work, because the task criteria is the guide for measuring students' ability, which can be in written or verbal forms, it needs to be shared with the students to know the output of the learning of the lesson taught. (Steven, POST1)

Observation of Steven's first lesson showed that he did not provide explicitly detailed criteria for the students; he gave them general statements on work quality and did not give this to students in a printed form. During Step 5 in the PLC cycle, Steven commented that he prepared criteria for each task but he did not provide it for students explicitly. The researcher reminded him that he needed to print the criteria and explain them for his students before giving them a learning task. In his second and third lessons he gave students written task criteria, but many students did not use them to assess their work. During the PLC discussion, Steven reflected on this and said he suspected that the students might not have understood the criteria. The researcher suggested that Steven could explain the criteria to students in detail, using language they could understand. This step is important for ensuring students are able to use the criteria to assess the quality of their work.

Steven showed some progress in his knowledge of EQC in comparison to observation of pre-intervention lessons, but he needed more time to develop his knowledge of this element and how to implement it effectively in his classroom.

During the PLC discussion, teachers prepared some samples of work that students could use to help them understand how the product of their work might look. In his first lesson Ruben provided samples of work for invitation designs and gave students general criteria but did not provide written detailed criteria for them. He gave students detailed descriptions of criteria for each learning task (and read them aloud) in his second and third lessons and this approach seemed to result in students having a better idea of his expectations for their work. This, together with providing samples of work to clarify the standard expected, resulted in an increase in students' general understanding of how to do the work involved in the lessons. Ruben's approach of providing examples of the quality of work expected was more effective than just providing task criteria alone; students' understanding could be stimulated by having practical examples to follow in their learning. Compared with his pre-intervention lessons, Ruben showed progress in his knowledge of EQC.

Overall, the PLC intervention contributed to progress in teachers' knowledge of developing task criteria to help students complete learning tasks. Some of the students were able to use these to assess the quality of their work. However, task criteria alone were not effective without explanation of how to use them; providing samples of work with criteria seemed to be the most effective approach (see Appendix 21). Teachers would benefit from more professional learning to develop their understanding of using task criteria and how to implement this approach effectively.

5.4.1.3.3 **PCK-EFL curriculum knowledge (PCK-CurrK)**

Teachers developed their curriculum knowledge after the PLC intervention.

Knowledge Integration

The teachers meaningfully integrated different sub-topics or topics within the EFL syllabus as a result of their PLC collaboration. After the PLC had been completed, Ruben commented:

For example, the lesson on invitation, it is not in the plan to integrate other knowledge that has connections to the lesson on invitations, but it is needed when the students are struggling to tell the time, so I have to re-explain about time to the students. We have learned about time before such as am/pm, how to tell time using the English language. (Ruben, POST1)

Lesson observations showed that in Ruben's first lesson there was no meaningful connection made between invitations and other topics or subtopics. In his second and third lessons, he made meaningful connections between prohibition rules and the consequences of breaking them and writing letters for special purposes. Ruben showed that he had progressed in his knowledge of KI from the time of his pre-intervention lessons, although he needed time to deepen his understanding of ways to effectively integrate knowledge in his lessons.

The PLC intervention helped teachers to think about the role of making connections between topics within their syllabus and curriculum and ways they could integrate different topics and subtopics in their teaching. There was some evidence that they had started to integrate HOT learning goals or objectives into their lessons, as shown in their lesson plans and lesson observations where they prompted students to analyse news content, evaluate strengths and limitations of traditional and modern houses, and create and design houses that employed features of traditional and modern houses (Table 5.7).

Findings from PLC conversations, lesson plans, lesson implementation and interviews showed that teachers' PLC collaboration helped them to begin to connect their CurrK and CK explicitly. They made some progress in being able to integrate different sub-topics into their lessons (see Appendix 21). However, they would need more time and professional learning to develop their knowledge and practice in this area.

5.4.1.3.3 **PCK - Knowledge of EFL learners and their characteristics (PCK-KLLC)**

Teachers integrated their KLLC into their lessons.

Knowledge of EFL students' understanding

Problematic Knowledge

During the PLC intervention the researcher noticed that all the teachers were unsure about this element so the definition and purpose of problematic knowledge was clarified and a video was used to help teachers understand the element.

The teachers showed that they employed some strategies to encourage students to share their different perspectives in lessons. Petrus reported in his interview after the completion of the PLC cycles:

The way I give them opportunity is by giving them questions. My questions consist of questions about this particular lesson, like do you understand? Who understands the lesson among you? If you don't understand please raise your hand. If you understand the lesson, please help to explain to your friends. Because there are some students who don't understand the lesson, but they don't raise their hands... I give them the opportunity to present their personal experiences and to ask other friends what they think of their experience. So, there are some questions like: why it is unforgettable for you? This type of question will provide opportunity for not only different perspectives but also for questioning their understanding and knowledge. (Petrus, POST1)

Petrus' comments showed that he included several techniques to overcome the problem of students not wanting to ask questions or being

unwilling to show that they had not understood the lesson. He invited students to share their perspectives through written tasks and listed some questions that would encourage students to do this. Observation showed that PK was limited in his first lesson because he presented knowledge as fact, although he did ask some students to share their different perspectives of the characteristics of traditional and modern houses. During Step 5 of his PLC cycle, he acknowledged that he presented knowledge as fact and that students did not question the information he gave them. He needed to instruct students or give them follow up questions to encourage them to provide different viewpoints. An example of this is when a student read their group answer that modern houses are damp/moist, and Petrus had to encourage students from a different group to question this answer. Students only provided their different views when the teacher prompted them to do so.

In his second and third lessons he gave students opportunities to construct knowledge socially through group discussion. Students discussed their experience and asked questions of each other before choosing one story to be written and shared with others in the classroom. In this way he began to show students that knowledge could be opened for different perspectives and questions. Petrus had developed his knowledge of PK compared to observations of his pre-intervention lessons. However, he needed more time to deepen his knowledge of ways he could encourage students to see knowledge as not only fact but also as being open to different perspectives.

It was observed that each teacher adopted a more student-centred approach where they heard students' perspectives (see Appendix 21). The PLC helped teachers implement the use of small groups where students were encouraged to ask questions rather than answer questions in front of the whole classroom. This showed that the teachers were developing a better understanding of their students and how they could encourage their participation in lessons. However, they needed more professional

learning to develop deep understanding of PK, its value in their lessons and to develop strategies to encourage it in their lessons.

Background Knowledge

After the PLC collaboration, the teachers showed that they were starting to draw connections between their lessons and students' background knowledge. For example, Melinda used students' background knowledge about their own houses in her lesson on traditional and modern house styles and students' experience in her third lesson on recount text, but she made only superficial connections in her second lesson.

Melinda outlined:

Firstly, in the lesson on descriptive text, I as the teacher asked students what their opinions are about the traditional house and modern house? What are the strengths of the modern house and the traditional house? Previously, they have been able to imagine what the model of a modern house is and a traditional house, so maybe they could just differentiate. Their background knowledge, they have known what they have experienced before so their next step is to share it in a story and write it in English (Melinda, POST1).

Observations of Ruben's lessons showed that he incorporated students' experience of receiving different types of invitations or seeing different types of notices in their everyday lives as a way of helping them make sense of the new learning topic on invitations. He drew on students' background knowledge in his second lesson when he used students' knowledge about prohibition in their daily lives to connect and introduce the main topic of the lesson. In his third lesson he was able to make connections between invitations and writing letters to explain absences from school. Ruben had progressed in his knowledge of BK from the time of his pre-intervention lessons.

The teachers had progressed in their knowledge of the value of including students' background knowledge in their lessons but they needed more time and professional development to develop deep knowledge of this

element if they were to be able to implement it in a way that would make learning relevant for their students (see Appendix 21).

Deep Understanding (DU)

The teachers developed their knowledge of how to use different strategies to increase students' deep understanding of the topics that they learned in their EFL classrooms. For example, Melinda explained that she used written evidence from students' classroom group work to evaluate their understanding of tenses and conjunctions:

The evidence is from their work. The first lesson is on descriptive text. The students are asked to differentiate, to compare the drawbacks and the strengths of traditional houses and modern houses. I asked them to make or to describe their own house by explaining and using the task criteria... I asked the students to write a story recount text from their own experience. They could retell their stories well, even though there are some students who could not do it. They could use past tense and conjunctions without making mistakes. (Melinda, POST1).

Observation of Melinda's first lesson showed that students' understanding was uneven throughout the lesson, and in her second lesson students were not able to do the task they were given. She requested to reteach the lesson and was able to prepare better learning resources with help from her colleagues in the PLC. There were some misunderstandings in her third lesson, with some students writing the recount text using Verb 1/present tense instead of past tense. Melinda showed a small amount of progress in her knowledge of DU in comparison to her pre-intervention lessons.

Overall, findings from PLC conversations, lesson plans and their implementation, and the quality of conversation in interviews, showed that the teachers needed more time and professional learning to develop their knowledge of ways to encourage students' DU and to implement strategies to teach them about it (see Appendix 21).

5.4.1.3.3 **PCK - Knowledge of EFL educational contexts and cultures (PCK-KECC)**

Observations showed that the teachers developed their PCK-KECC after the PLC intervention.

Cultural Knowledge (CulK)

The teachers talked about starting to include cultural knowledge in their EFL lessons after the PLC intervention. After the PLC cycles had been completed, Diana said she explicitly considered cultural practices in her lessons and used texts and materials related to students' local knowledge:

The cultural aspect in the lesson is in this island, the sea turtles are caught by the locals for making jewellery. So, it is part of the culture to use sea turtle shell to make accessories such as bracelets, rings, earrings and other types of accessories and they are even sold. So, it is already rooted in the way of life, and they catch sea turtles for that purpose. (Diana, POST1)

Observation of Diana's third lesson showed that she was able to connect students' knowledge to worldwide issues when she gave lessons about the need to conserve sea turtles rather than catch them and use them for cultural purposes.

Although the five EFL teachers had progressed in their PCK-KECC during the PLC intervention and were starting to consider and include local and other cultural and contextual knowledge in their teaching, they seemed to need more professional learning to be able to incorporate CulK consistently in their lessons (see Appendix 21).

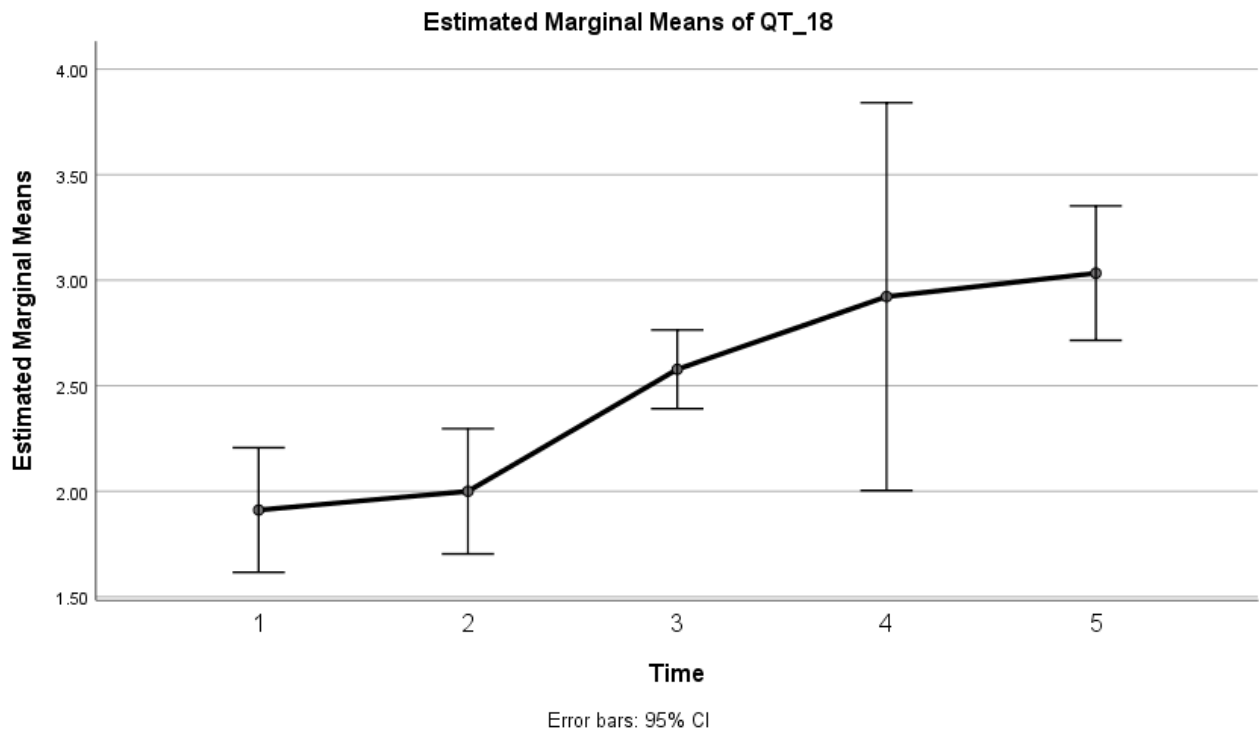
5.5.1.2 PLC intervention: EFL teachers' teaching practice

This section presents the results of quantitative data analysis of lesson observations carried out using the QTF. A repeated measures ANOVA was employed first to analyse the lesson observation data from the observations data captured by all teachers collaboratively during Step 5 of PLC cycles with 5 participants at 5 observation time points. A repeated measures ANOVA with a Greenhouse-Geisser correction (Field, 2009)

showed that the mean score of QTF which measured teachers' PCK differed significantly between time points [$F(1.437, 5.747) = 9.719, p < 0.018$]. Post hoc tests using the Bonferroni correction (Field, 2009) revealed that teachers' PCK during the PLC improved significantly from the pre-intervention QTF video lesson observation (T1) and the video observation conducted in the last PLC intervention cycle (T5) ($p < 0.011$). There was a significant difference between teachers' PCK during the second pre-intervention QTF video lesson observation (T2) and the video observation conducted in the last PLC intervention cycle (T5) ($p = 0.049$). The effect size in repeated measures ANOVA using partial eta squared indicated a larger effect size than is typical ($\eta = \sqrt{0.708} = 0.841$).

Figure 5.3 presents a profile plot showing that teachers' PCK (measured using the QTF elements) improved significantly from before the PLC-intervention (T1) to T5, when teachers had participated in 3 cycles of the PLC intervention. It also showed there was a difference between teachers' PCK between pre-intervention lesson observation 2 (T2) and post-intervention lesson observation 5 (T5) conducted after 3 cycles of PLC. This indicated that teachers' participation in PLC cycles contributed positively to their development of PCK.

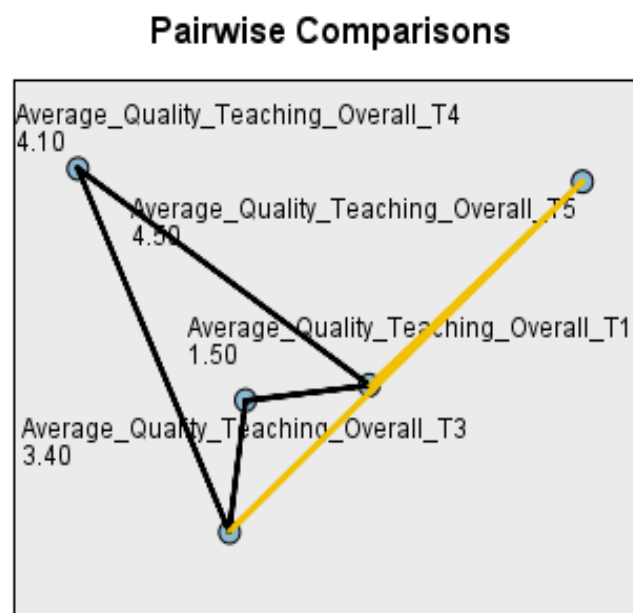
Figure 5.3 Teachers' PCK changes from QTF classroom observations at pre-intervention 1 (T1), pre-intervention 2 (T2), 1st post-intervention (T3), 2nd post intervention (T4) and 3rd post-intervention (T5) (parametric test)



Furthermore, a non-parametric Friedman test (Field, 2009) was conducted to confirm the results from the parametric tests. The Friedman test was carried out to compare the difference in teachers' PCK measured using the QTF elements during the lesson observations. There was a statistically significant difference in teachers' PCK measured using the QTF elements during their lesson observations, $\chi^2(4) = 16.571$, $p = 0.002$. Dunn-Bonferroni post hoc tests were carried out and there were significant differences between the QTF pre-intervention lesson observation (T1) and post lesson observation after 3 PLC cycles (T5) $p=0.027$. The lesson observation between the QT second pre-intervention lesson observation (T2) and post lesson observation after 3 PLC cycles (T5) $p=0.027$ after Bonferroni adjustment. There were no significant differences between any other lesson observations.

The results suggested that there was a difference between teachers' PCK in lesson observation at T1 and T5 and there was a significant difference between teachers' PCK in the lesson observation at T2 and T5, meaning that teachers had made positive progress in developing their PCK. Overall, the non-parametric analysis result confirmed the parametric test result that there was a significant difference between teachers' PCK before and after the PLC intervention, indicating that there was some change in teachers' PCK resulting from their participation in the PLC. Figure 5.4 shows the pairwise comparisons of the QTF reflecting teachers' PCK changes between T1 and T5; and T2 and T5.

Figure 5.4 Teachers PCK changes from QTF classroom observation analysis using non-parametric test



Each node shows the sample average rank.

Overall, the results from the quantitative data analysis of lesson observations using the QTF elements aligned with the results of the qualitative data analysis in that they showed changes in the 18 elements of the QTF which reflected changes in teachers' PCK after participating in a PLC intervention for 6 weeks in School A and 9 weeks in School B.

5.5.2 PCK beliefs and attitudes about teaching HOT and students' ability to learn HOT

This section addresses the research question (RQ 2) about influences of a PLC on EFL teachers' PCK related to their beliefs and attitudes about teaching HOT, and their beliefs about students' ability to learn HOT in rural schools. It draws on interview data and PLC discussions to report the findings related to any changes in teachers' attitudes and beliefs.

5.5.2.1 Changing teachers' beliefs about teaching

Interview and PLC discussion data showed that after the PLC the teachers had changed their beliefs about teaching in that they not only taught to comply with curriculum requirements, but also put greater effort into ensuring that their lessons were of high quality. As part of the PLC, they evaluated their teaching approaches and began to move from teacher-centred to student-centred approaches:

The teaching approach that we currently use is based on teacher active only. So, after PLC we know better how to make students become more active than teachers. There is a change to be more professional. By participating in the PLC, we got more knowledge so it brings changes in our teaching and learning. (Diana, POST1)

Teachers in both schools began employing teaching strategies to encourage students' active participation in learning activities, such as HOT activities, small group projects and student-centred activities. Overall, interviews with the five teachers and PLC discussions showed that the PLC intervention had contributed to shifting their beliefs about teaching, student learning and their role as teachers, and this was impacting on their classroom practice to make it more student-centred.

5.5.2.2 Changing teachers' beliefs about their self-efficacy

Teachers' self-efficacy beliefs are their "physiological and affective experience during a teaching-related event or task, such as satisfaction, pleasure, and anxiety" (Zonoubi, Rasekh, & Tavakoli, 2017, p. 2). Collaboration with colleagues in the PLC intervention provided opportunities for teachers to review their teaching and their underlying

beliefs of self-efficacy. After participation in the PLC, they expressed more satisfaction with the result of their teaching because they could see the evidence of successful practice in their classrooms. This was exemplified by Melinda's comment:

Firstly, much positive feedback that was given to me increased my confidence as an English teacher. I lacked confidence in the beginning because of my limited knowledge. But after participating in the PLC, there were many things, positive things that I have gained or received that helped me to improve my teaching in the classroom. I can explain better to the students after preparing lesson plans. I have more self-confidence to explain to the students, to share the knowledge with the students. (Melinda, POST1)

Improved self-efficacy was contributing to the teachers becoming more confident, happier and more motivated to do their job, as shown by Diana's comment: 'I have more self-confidence, probably before the PLC I couldn't design lesson plans. After I have participated in this activity I have started to be able to design my previous lesson plans so they are better' (Diana, POST1).

Having opportunities to plan lessons collaboratively, observe their own teaching, evaluate it and receive feedback from their colleagues empowered these teachers and contributed to their overall ability to decide on instructional strategies and lesson activities they could use to achieve their learning goals.

Petrus said he felt more valuable to his colleagues because he could contribute to their development during the PLC by giving them useful advice: "after PLC my confidence increases when I enter the class" (Petrus, POST1). Steven and Ruben also commented that the PLC contributed to their self-confidence related to their ability to teach lessons better than before the intervention.

These feelings of self-worth encouraged the professional growth of these teachers who attributed their improved self-confidence to collaborating in

the PLC. The PLC contributed positively to the development of the teachers' PCK beliefs related to self-efficacy.

5.5.2.3 Changing teachers' beliefs about students' ability to engage in HOT

After the PLC intervention, teachers indicated that they had changed their beliefs about the ability of their rural students to learn HOT. They included some HOT activities in their lessons and realised that their students could do them, which shifted their beliefs about students' ability to learn HOT.

For example, Ruben shared:

...We have started to apply HOT and the students seem happy or they don't think it is a hard thing for them to do. I think it is a good change. It breaks a perception that the students are not capable, it shows that they have the capability. (Ruben, POST1)

As part of the PLC intervention, these EFL teachers were shown how to include and implement HOT learning activities in their lessons. Through this they saw that their students had the ability to complete these activities. They were beginning to develop their ability to plan and implement HOT and it was clear that they needed more time to deepen their understanding of HOT and how to teach it effectively; further professional learning could help them with their understanding of critical thinking and how to teach to develop it.

5.5.2.4 Changing teachers' motivation for teaching

The PLC contributed to teachers' motivation to teach higher quality lessons because the collaborative environment gave them the opportunity to reflect on their teaching, evaluate it, and receive and give feedback about their teaching and that of their colleagues. Diana said that the PLC motivated her to provide better quality teaching, and Steven commented that it had encouraged him to learn new knowledge even though he was close to retirement:

My personal experience of becoming a part of the PLC is that I feel encouraged to re-learn additional knowledge from what I

have gained since my time at the university and in the early years of being a teacher. Now, I am approaching my retirement and I just experience learning something like this again. ... we received high encouragement which motivated us to work better in order to develop the education particularly in our school. (Steven, POST1)

Ruben described having a more professional approach to his teaching after his PLC participation:

Before I participate in the PLC, every time I enter the classroom I plan the lesson spontaneously on the spot in the classroom. However, after participating in the PLC, for all lessons, when I enter a classroom, I can apply all my prepared lesson plans... I think the lesson will become more interesting for students and I feel the learning process becomes more optimal and effective... Therefore, it gives me more time and energy to help students in the lesson than before. (Ruben, POST1).

All of the teachers revealed that their participation in the PLC contributed positively to their motivation to improve their teaching so that lessons would be interesting, meaningful and relevant for their students. This renewed motivation stemmed from feeling encouraged and supported by their colleagues and the facilitator in the PLC.

5.5.2.5 Changing teachers' responsibility for students' learning

After the PLC intervention, teachers took more responsibility for their teaching than they had before it; they became more aware of the importance of preparing for and evaluating their teaching. They realised that it was their responsibility to design high-quality lesson plans and that they should not just copy lesson plans from their colleagues without considering the needs of students in their classes. This was shown by comments made by Melinda, Steven and Ruben:

My main responsibility as a teacher is to educate human beings to become civilized and better... So, the teacher should know it first on techniques, methods, and not only the theory but also teachers should have skills in teaching practice. (Melinda, POST1)

I gained new knowledge and experience even though I only have four more years teaching. I will apply this knowledge in doing my

tasks and responsibilities... I feel that maybe God has shown me the way by getting selected to be part of the PLC. (Steven, POST1)

...after participating in the PLC through learning the quality teaching framework, actually I realise that I can share the lesson in a better way to produce a better result. (Ruben, POST1)

These comments showed that the PLC contributed to increasing the sense of responsibility for students' learning that these teachers developed as a result of their collaboration in the PLC. They started to ensure that they understood lesson content and to assist students to learn the content presented.

My responsibility as a teacher is not only to share the lesson and then finish there. Our responsibility as teachers also we have to read about the lessons that we will teach. The second is whether the students really understand the lesson that we teach, or we just teach and follow the lesson plan without considering students' background knowledge. We have to feel responsible to know all of our students' needs in the class, because there is the cultural aspect there, there is students' engagement. So, we feel that we have a huge responsibility to improve students' ability to understand the key concepts that we teach them. (Petrus, POST1)

5.5.2.6 Changing teachers' accountability

After the PLC intervention, the teachers changed the way they looked at their teaching and realised that they needed to do more than just teach students in a superficial way. They needed to be accountable for what they taught them and for reaching set learning outcomes. They realised the importance of developing students with HOT abilities. They commented on the need to have integrity in doing their job as teachers and to consider how they could operate in a more ethical way. The PLC provided the teachers with opportunities to evaluate their own practice in a professional way and to consider how they could change it. Diana commented on ethical practices in the classroom:

... for example, previously we have taught a topic and it finish there... Then we can manipulate students' score, maybe from not

passing score to passing score. So, through my learning in the PLC I can change to help my students to become more responsible to do the task that the teacher has given. So, they can get better learning outcomes which are their original learning results and were not manipulated results by the teacher... (Diana, POST1)

The PLC provided teachers with opportunities to observe and be observed by their fellow colleagues; issues about teaching behaviours were raised that could not be disregarded. PLC discussions helped teachers become more aware of the need to be accountable for their classroom practices, including the strategies they used to manage student behaviour.

Post-PLC teacher interviews showed that they were developing a stronger sense of accountability for the teaching of the content of the curriculum, their teaching processes, behaviour management and students' learning outcomes. In one of the PLC discussions, Steven apologised for doing some things that were not appropriate, such as hitting students; this was observed in the video. He apologised for his old ways of disciplining students and said he realised that the new way in education was supposed to be child-friendly. He realised that he was full of emotion in the classroom and used corporal punishment on students. He thanked the facilitator for facilitating and guiding him during the PLC and said he would use this experience in his practice as a teacher. He said he would love to continue this good practice of designing innovative lesson plans and using teaching and learning approaches that he learned in the PLC. Melinda shared: "... To create a safe learning environment, firstly teachers have to avoid using negative language, so the teachers don't make students feel unappreciated socially and have low self-esteem" (Melinda, POST1). Ruben also added: "...if there is any problem or students' mis-behave in the classroom, ... I will try to address it and encourage students to appreciate each other and therefore they will be appreciated too" (Ruben, POST1).

5.5.2.7 Encouraging knowledge transfer

In the PLC, the five EFL teachers were able to learn practical strategies that helped them do their job better. They valued the positive contribution of the QTF to planning and reflecting on their teaching. Diana's comment shows that she valued what she had learnt about the QTF in the PLC:

Since my participation in this PLC, there are many questions from my colleagues about what I get from the PLC? I then shared with them that I have had many changes. For example, how to design lesson plans, we also use explicit quality criteria [an element of the QTF], the criteria could measure students' work quality. Therefore, we give tasks to students based on the quality criteria. So, the students are responsible for finishing their tasks. We motivate other teachers to use the quality criteria, maybe they can be more productive. (Diana, POST1)

Steven valued the PLC highly enough to consider conducting one (or many) with teachers in his school:

The quality teaching framework is good. So, if the PLC is conducted continuously in every school for teachers from all subjects, the teachers can be assisted. For example, in this school there are ten subjects and if each subject has a PLC, then the quality of school surely will improve to be better. So, I as a senior teacher in this school, have a thought that in order to bring progression in the future for this school, English teachers can share with other teachers from different subjects how to do the same thing in order to improve the quality of teaching and to improve students' knowledge. (Steven, POST1).

Diana showed that she saw the explicit quality criteria in the QTF to be beneficial for her students and for this reason she shared it with her colleagues. Steven indicated that he could see the potential of a PLC as an effective tool to support professional learning. These comments indicate that the teachers saw the PLC as a way of assisting teachers to share their knowledge with each other and become agents of change in their schools.

5.5.3 Influence on teachers' job satisfaction and retention

5.5.3.1 Changing teachers' job satisfaction

Participation in the PLC resulted in teachers expressing higher job satisfaction because they said they felt more empowered to do their job and they could design and explain the content of lessons more easily. This reduced their previous feelings of dissatisfaction with their own performance. Melinda commented:

I can explain better to the students after preparing lesson plans. I have more self-confidence to explain to the students, to share the knowledge with the students. If we teach well, indeed we will feel happy and satisfied. But if we don't teach properly, we will feel less pleased and less happy. (Melinda, POST1)

Before the PLC intervention, teachers had expressed low satisfaction with their teaching and had low expectations for student learning. However, after participating in the PLC which used the QTF, teachers expressed the view that they felt encouraged and knew what they needed to do to assist students' learning.

5.5.3.2 Changing teachers' job retention in rural areas

After the PLC intervention, the teachers stated that they had gained more knowledge about teaching and learning, and that they were enjoying their teaching more and wanted to continue the good practices that they had developed. They also expressed the belief that they would stay in the teaching profession longer, because they now knew more about what they were expected to do. This was shown by comments made by Diana and Ruben. Diana commented: "I have to continue teaching because what I have learned has to be applied to my students" (Diana, POST1), and Ruben said: "...probably I teach for the next fifteen years or twenty years from now I feel that teaching is a fun thing for me" (Ruben, POST1). Overall, teachers showed positive job retention beliefs following their participation in the PLC.

5.5.4 Influence of PCK on teachers' instruction to promote HOT after a PLC intervention

This section addresses the research question (RQ 3) about whether the PLC intervention to improve EFL teachers' PCK influenced teachers' instruction to promote HOT.

5.5.4.1 Changing teachers' knowledge of lesson planning

Interview responses and lesson plans showed that the teachers had made progress in developing the knowledge and skills they needed to design their own lesson plans as a result of their participation in the PLC. Before the PLC intervention they were confused about how to design lesson plans, and Diana, Petrus and Melinda talked about copying their colleagues' lesson plans because they did not know how to make their own. In their post PLC interviews, the teachers described the benefit they gained from receiving feedback from their colleagues that helped them design lessons:

I don't really know the way to design lesson plans, the one that I have I just copy and paste from other people. So, by having this collaboration I have more understanding about it. This is actually how to design lesson plans, it is like this... By having quality teaching PLC, the learning becomes more effective, makes improvement on the lesson plan design, becomes more specific... and it does not cover too many aspects so that the lesson does not focus on the main topic. This PLC helps us to make lesson plans simpler. (Diana, POST1)

Melinda's lesson plan on 'recount text' revealed that she tried to combine mind mapping and questioning to promote students' HOT. This plan was prepared in a PLC meeting after she received feedback on types of activities that she could include to promote HOT in her teaching of recount text. She also helped the students to plan their writing by showing them how to use the what, when, where, why, who (5Ws) and how (1H) questions to plan and analyse a story. As a result of the PLC collaboration, she was able to provide task criteria in her lesson plan structure to show students her expectations for task quality related to

analysing and writing recount text. Her task criteria divided the quality of the expected work into 5 categories from excellent to poor quality, with excellent work providing a comprehensive analysis of the recount text using all the 5Ws and 1H questions and providing views about the story as a conclusion. After this guidance, it was found that Melinda's students were able to write their own recount text using the 5Ws and 1H questions to arrange their text and employ appropriate conjunctions to link their story with past tense correctly.

It was concerning that observations showed the activities implemented by teachers in their lessons did not cover the evaluating and creating skills they had discussed (see Table 5.7). The PLC collaboration had assisted the teachers to prepare their lesson plans with clear goals, simple topic content, simple learning activities, and task criteria, but their knowledge of HOT concepts was still limited and they would need more time to develop their knowledge and understanding of HOT concepts in order to implement them. The teachers stated that they used the QTF in preparing, teaching and evaluating their lessons and that it contributed to developing their concept of HOT in EFL. Ruben shared: "the implementation of the quality teaching framework is very useful in changing my teaching practice" (Ruben, POST1).

Petrus showed some progress in his understanding of HOT in his lesson on 'Recount text on an unforgettable experience'. The learning goals in the lesson plan were to remember one's unforgettable experience, retell the experience, and produce a recount text about that experience using the 5Ws and 1H questioning technique. He asked students to brainstorm in small groups using a checklist related to their experiences. Students evaluated and checked if the information given from their peers in a different group was accurate then they re-checked the answer with the group as well. Providing students with an evaluation task assisted them to use HOT (analysing and evaluating).

Figure 5.5 below shows the lesson goals and activities for Petrus' lesson 'Recount text--unforgettable experience'.

Figure 5.5 Petrus post-intervention lesson on 'Recount text--unforgettable experience'

- Tujuan pembelajaran:
1. Menyebutkan kembali kegiatan yang dilakukan kemarin berdasarkan 5W+1H
 2. Mendeskripsikan kegiatan yang dilakukan kemarin berdasarkan 5W+1H
 3. Menceritakan kembali kegiatan yang dilakukan kemarin dalam bentuk tulisan berdasarkan 5W+1H
 4. Membuat kalimat sederhana dalam bentuk past tense.
 5. Mengorganisasikan kegiatan yang dilakukan kemarin berdasarkan 5W+1H

Materi pembelajaran : Recount teks

Metode pembelajaran: small group discussion

Langkah-langkah kegiatan:

- I. Brain storming
 1. What did you do yesterday?
 2. Why did you do that yesterday?
 3. Who was with you when you
 4. How did you do that
 5. Where did it happen?

 6. When did it happen?
 7. How do you feel?

Kegiatan inti :

1. Explanation about recount text (15)
2. Give example of recount text
3. Ask students to work in group(5)
4. Divided checklist of 5W+1H
5. Ask student to write a recount text based on their unforgettable experience. (15)
6. Change the students' work with the others group for checking based on the success criteria and explain the reason why you give that score to them (10).
7. Read aloud(10)
8. Give chance to the others group for asking question(15)

Kegiatan penutup:

1. Menyimpulkan materi pelajaran (5)
2. Memberi motivasi.

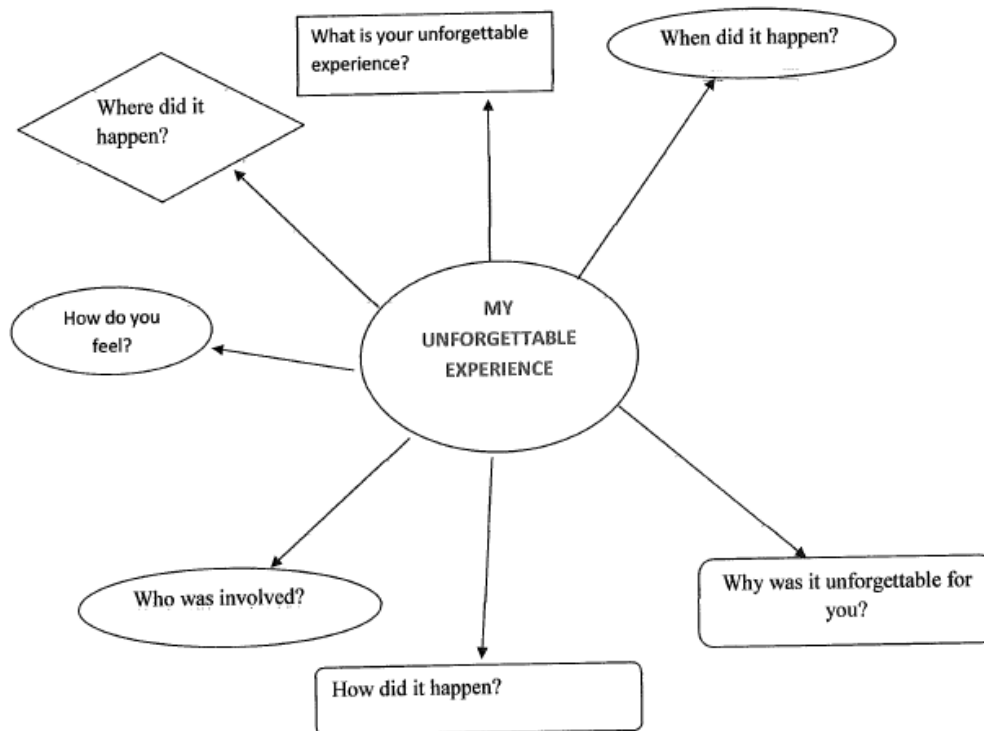
Sumber belajar:

1. Internet
2. Buku yang relevan
3. Lingkungan sekitar

The questioning method that Petrus used to help students plan and write their story promoted HOTS in the sense that it helped them to analyse their story by combining the mind mapping technique and the 5Ws and 1H

questioning technique. Figure 5.6 shows the tool that Petrus made to help students begin to learn about HOT (analysing) in his EFL lesson.

Figure 5.6 Mind mapping and 5Ws and 1H techniques for promoting HOT



Petrus listed as a 'creating' activity (HOT) the task of 'writing students' experience or activities from their holiday' (see Table 5.7), indicating that he seemed to have confused 'create a story' with the idea of creating, where students would bring ideas together to create something new or solve a problem. Students were not being given the opportunity to develop their creativity by this approach.

The teachers recognised the importance of task criteria after the PLC, as shown by Petrus' comment that he now considered the importance of task criteria in his lesson planning and teaching to ensure students had a clear understanding of how to do learning tasks. Diana reported that she found that a simple structure and a more focused lesson plan helped her focus her teaching and learning, and Steven and Ruben also said they valued

what they had learned about structuring lessons from their participation in the PLC. The combination of mind mapping and questioning was a simple but effective technique to help Petrus' students move from LOT to HOT because they were prompted to explain why an experience was unforgettable rather than just describe it. This type of approach is supported by other studies that have suggested that concept mapping and a questioning strategy help students develop their HOT skills (Gonzalez, 2012; Sunggingwati & Nguyen, 2013; Wang & Liao, 2014). Support from his colleagues in the PLC was crucial for helping Petrus integrate this activity into his EFL lesson plan. However, it can be seen that the questions that Petrus included for mind-mapping reflected LOT questions only.

The other teachers also said they developed a better understanding of how to include HOT activities in their lesson plans after their participation in the PLC intervention (see Table 5.7).

Although it is clear that the teachers had made progress in their knowledge of HOT concepts and had started to recognise the importance of HOT in their teaching, they still struggled to implement HOT activities in their lessons effectively. They needed more time and professional learning to develop their knowledge of HOT concepts in order to not only plan them but also use them in their instruction. They also needed more assistance to prepare and discuss ways of implementing HOT activities; this could be done in a collaborative PLC.

5.5.4.2 Using teaching resources in the EFL classrooms

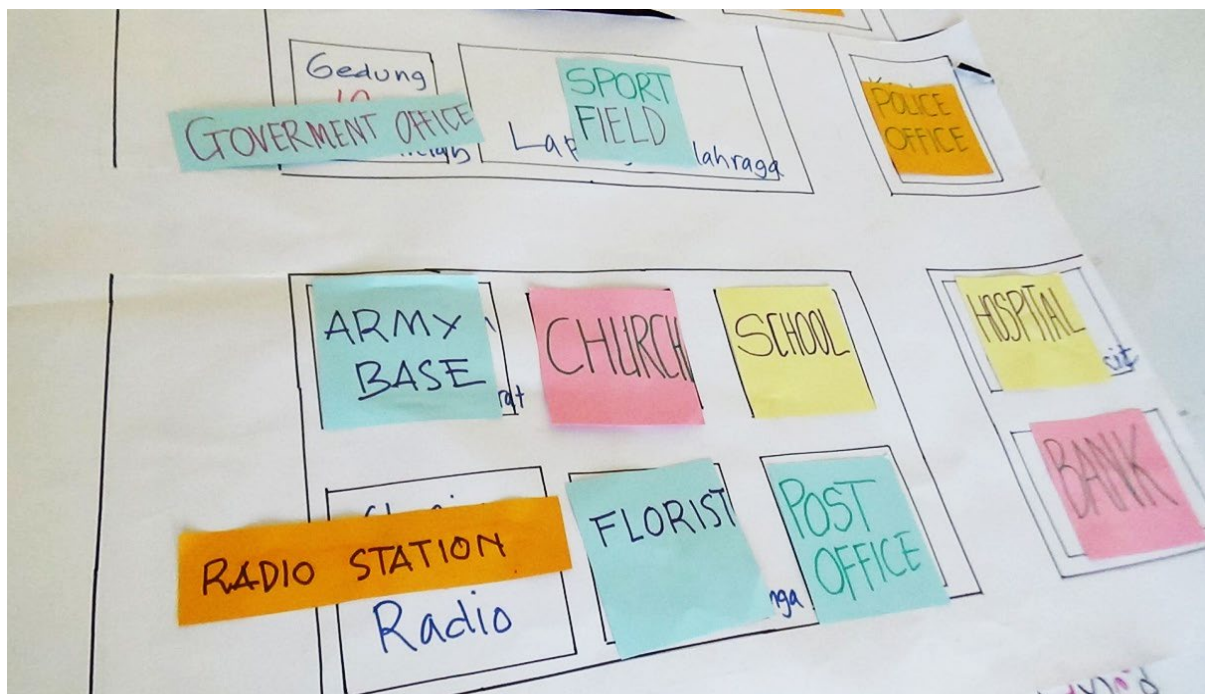
Interview and document collection data analysis revealed that the PLC encouraged teachers to design and integrate interesting and creative teaching aids or media in their teaching. During the PLC, the teachers prepared collaboratively the teaching resources for their lesson and developed skill and knowledge for integrating and using them to help students' learning. Once they employed these resources in their

classrooms, they recognised the contribution they made to students' engagement because learning became more fun and interesting for them.

The most beneficial part of the quality teaching PLC is how we prepared the lessons with all the teaching aids. I think a teacher should prepare the learning in a fun way, such as preparing pictures and interesting stories. So, the students are encouraged to learn the content of the lesson taught and the learning goals can be achieved. Actually, ... it improves my teaching to be better from what I have done in my teaching all this time. I mean previously I didn't use any teaching aids, now that I use the teaching aids I can gain a better result from my teaching and I feel happy that I can teach better and the students achieve better learning results. (Steven, POST1)

Steven's efforts to involve students in their learning were reflected in the way he employed teaching resources to develop students' understanding so they would achieve the learning outcomes of his lessons. Figure 5.7 shows an example of a teaching aid used in Steven's classroom:

Figure 5.7 Steven's resources for a lesson on 'Asking and giving directions'

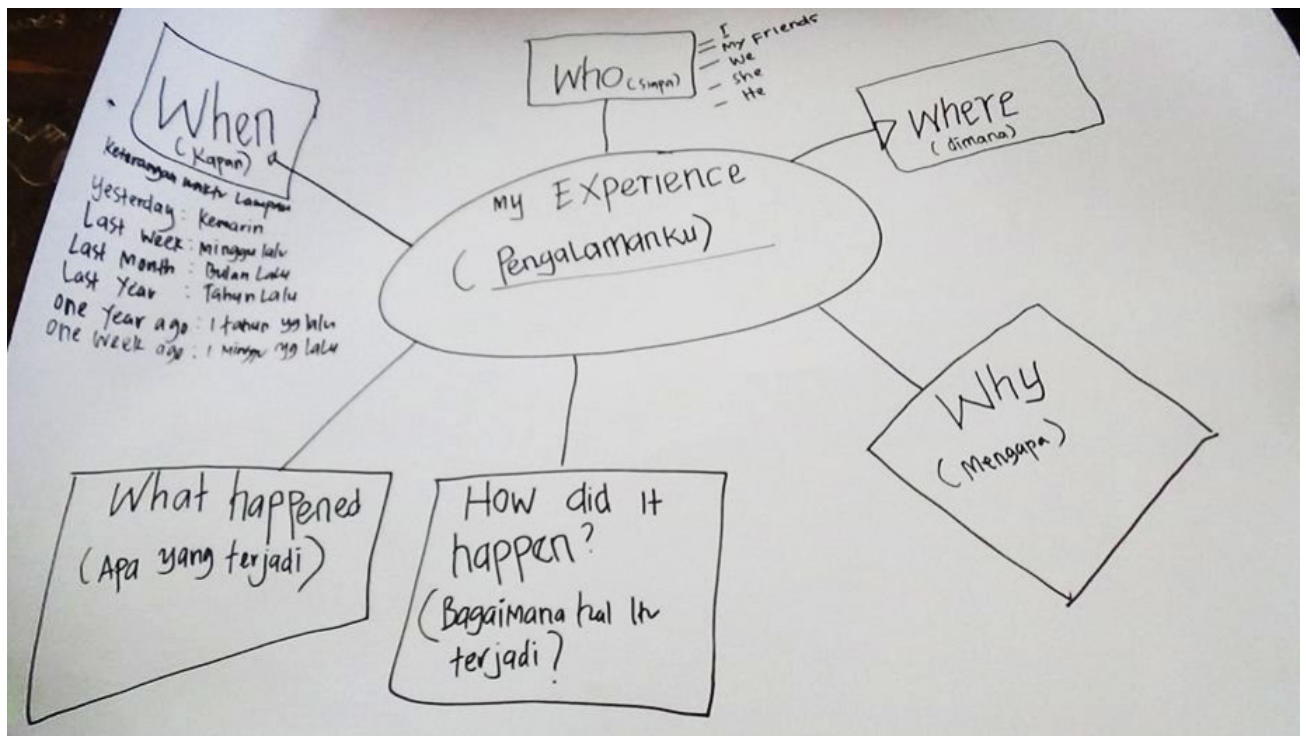


The teaching aid (poster) was used by Steven in teaching the topic on 'asking and giving directions'. Students were asked to make their own maps of their local areas and to label different public places on the maps.

His modelling of this approach encouraged students to pay more attention to the lesson and helped them make sense of the abstract concept of 'asking and giving directions'.

Another example of a teaching aid was Melinda's poster for the lesson on 'Recount text', shown in Figure 5.8.

Figure 5.8 Melinda's teaching aid for a lesson on 'Recount text'



Melinda's poster was developed collaboratively in the PLC. Melinda used it to explain the mind map and 5Ws and 1H questioning strategy that students could use before they analysed the experience and wrote their own recount text. The PLC meetings were beneficial for the teachers because they were supported by their colleagues and the facilitator (researcher) to prepare not only their lesson plan, but also their teaching aids to facilitate their teaching.

Interviews with the teachers revealed that employing teaching aids and hands-on activities contributed positively to students' interest in learning English because this approach was different from their previous learning

experiences. This enthusiasm brought a different learning atmosphere into the classroom, and the teachers noticed that students were becoming more engaged in learning EFL.

Diana commented:

All of this time we see students seem not interested in the lesson that we taught, but by using the framework as the guideline, we can attract students' interest to study hard. The lesson becomes more interesting for them. For example, the way we teach, we can change it, changing our uninteresting way of teaching and using more interesting teaching aids for students... Therefore, the students become more interested to learn what is taught to them. Because all this time in the learning process, the students seem to be passive recipients for what is taught to them by teachers... the system that we currently use is based on teacher activity only. So, after the PLC we know better how to make students become more active than teachers. Teachers only have to share important parts of the lesson but then the students continue to do the task. (Diana, POST1)

Developing various teaching aids to facilitate students' learning enhanced their interest in learning EFL. This was a shift from the pre-intervention pedagogical approach of being teacher-centred to a more student-centred approach after the PLC intervention.

5.5.4.3 Changing to a HOT orientation in EFL teaching practices

After the PLC intervention, the teachers talked about how they had changed the way they taught and had developed new teaching strategies that helped them include HOT lesson activities to challenge students in their learning. Teachers did not dictate to students as they had done previously but provided creative and fun activities to help students develop their HOT and be more active in their EFL learning.

Diana described the benefits she gained from the PLC in terms of helping her move toward teaching HOT and teaching more effectively:

During the learning here, we always do LOT learning, after using the framework we can learn how to have HOT learning. So, there is a lesson that I gain from this activity which is to improve

students' HOT learning... So, the point is we can help students to develop HOT so they are able to evaluate and create... By using the quality teaching framework, we become more focused on students' work. It is extremely helpful because I am able to compare my previous teaching and my teaching now after I get this quality teaching. So, with the quality teaching I can teach better based on the QTF. By having the quality teaching PLC, the learning becomes more effective and it makes improvements on designing lesson plans. (Diana, POST1)

The EFL teachers found that the PLC collaboration structured by the QTF gave them the opportunity to learn about HOT and how to integrate HOT activities into their lessons. An example of this was Ruben's first lesson about 'invitations' in which he had goals of identifying the structure of invitations, identifying the language used for invitations, and then designing and writing invitations. He planned to help students learn how to evaluate their work by using task criteria as outlined in Figure 5.9 below.

Figure 5.9 Post-intervention Ruben’s lesson 1 task criteria

6. Kriteria Penilaian Ketrampilan

Invitation Design				
Excellent	Very good	Good	Average	Poor
Interesting design	Interesting design	Interesting design	Average design	Poor design
Appropriate language used	Appropriate language used	Appropriate language used	date, place and time of even are listed	Appropriate language used
Clear content (date, place and time of even)	Clear content (date, place and time of even)	date, place and time of even are listed	But no invitee and inviter	No clear time, date, and place
Invitee and inviter	Invitee and inviter	But no invitee and inviter	With clear purpose of invitation	
With clear purpose of invitation	With clear purpose of invitation	With clear purpose of invitation	With some grammatical errors	
Without any grammatical error	But one or two grammatical errors	With some grammatical errors		

Success criteria of task

No.	Criteria	Yes	No
1.	Does the invitation have interesting design (apakah undangan tersebut mempunyai desain yang menarik)		
2.	Does the invitation use appropriate language for its purpose (apakah undangan tersebut menggunakan bahasa yang sesuai untuk tujuannya)		
3.	Does the invitation have clear date, place and time (apakah undangan tersebut mempunyai tanggal, tempat dan waktu yang jelas)		
4.	Does the invitation list the name of the inviter (apakah undangan tersebut mencantumkan nama pengirim)		
5.	Does the invitation list the name of the invitee (apakah undangan tersebut mencantumkan nama penerima)		

As shown in Ruben’s task criteria and rubric, the learning activities involved remembering, understanding and applying knowledge and analysing and evaluating their own invitations. Ruben provided examples of different invitation forms and included local types of invitations in the lesson. Students worked in small groups to analyse and produce their invitation and were prompted to be creative in their invitation design. Classroom observation of the lesson on invitations confirmed that Ruben

was successful in translating into practice the knowledge he gained in the PLC.

The participating EFL teachers showed changes in their teaching practices after participating in the PLC and it was observed that they were starting to recognise the importance of HOT in their EFL lessons, as seen in Table 5.7. However, they would need more time and professional learning to be able to develop their understanding of the concept of HOT so they would be able to plan learning activities to implement HOT effectively.

5.5.5 Influence of teaching HOT on EFL students' use of HOT in rural schools

This section addresses research question (RQ 4) relating to how teaching rural students about HOT influenced their use of HOT in EFL classes.

The PLC encouraged EFL teachers to teach HOT in their classrooms in a hands-on way where they included activities prompting students to analyse, evaluate and create. Steven in his first lesson planned an activity for providing creative ideas to improve the school library and its services (see Table 5.7), however, he did not implement this activity. In Steven's lesson on 'asking and giving directions for public places', students had the opportunity to develop their HOT when they analysed a map, evaluated their friends' answers, and drew their own map (as seen in Table 5.7). Although drawing a map was an activity that involved students actively in their learning and was relevant to them, it was not a HOT activity of creating a new concept. Steven misinterpreted 'creating' to mean 'draw up', indicating that more discussion of creativity would be needed to help him understand it and be able to plan to develop it in his EFL students.

Examination of Table 5.7 (Section 5.4.2.3.3 page 259) reveals that most of the other teachers misunderstood the meaning of 'creating' in their lessons. Inspection of the activities shown in the 'creating' column of Table 5.7 shows they were either not examples of creating activities or

referred to 'drawing up', where 'creating' was misinterpreted. This issue will be discussed in more detail in Section 5.6.

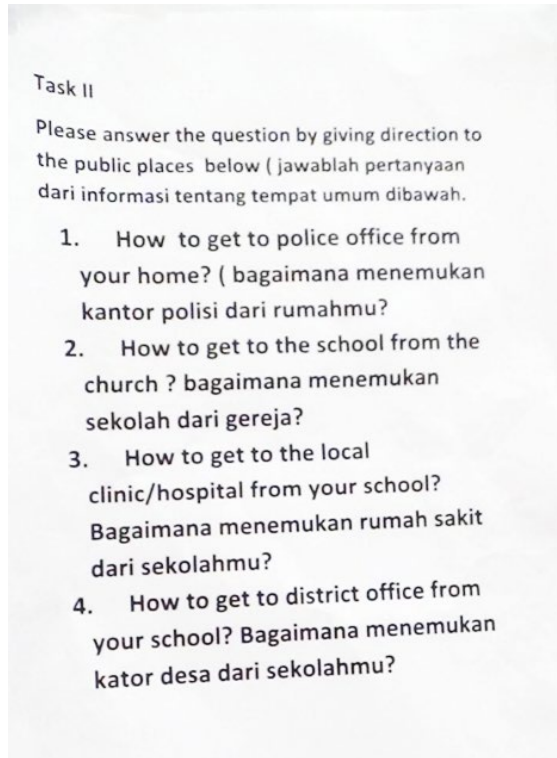
Figures 5.10 and 5.11 show two of Steven's lesson tasks and students' work on the topic of giving and using directions.

Figure 5.10

Student work from Steven's lesson task 1—drawing a map



Figure 5.11 Student work from Steven's lesson on Asking and giving directions about public places



- ① TURN (LETE)
- ② TURN (LETE)
TURN RIGHT
GO STRAIGHT
TURN RIGHT
- ③ GO STRAIGHT
TURN RIGHT
TURN (LETE)
GO STRAIGHT
TURN RIGHT
- ④ GO STRAIGHT
TURN RIGHT
GO STRAIGHT

Page 4

Task III
Please check your friends work on direction using the table below (cek pekerjaan teman dengan mnggunakan tabel dibawah ini)

No	True	False
1	✓	
2		✓
3	✓	
4		✓

Steven planned his lesson so that students would work in small groups to respond to the task of generating a map of local public places in their area. After completing their maps, students needed to be able to give directions related to their own map and answer questions about directions on the map. They then exchanged their work with one another to evaluate their answers based on the map. Although this hands-on team activity encouraged student participation, they struggled to analyse and

evaluate and it was clear that they needed more time and classroom work on this aspect of HOT. More work would be needed to help these teachers develop their understanding of creating and how to teach it. Observations showed that, prior to the PLC intervention, students in Steven's class did not engage in active learning activities but after the intervention they were more engaged and showed that they were able to use task criteria to help them understand the expected quality of their work.

Petrus' lesson on the topic of 'describing a house' was designed to encourage development of student thinking from LOT to HOT. Figure 5.12 shows the learning task and task quality criteria for his first lesson on 'Describing a house'.

Figure 5.12 Students' task in Petrus' lesson 1

Task 1

Instruction:

Please describe your own house to the group by mentioning parts of your house and its functions.

Task 3

- 1. Design a house by combining the concept of Sabu traditional house and Modern house.**
- 2. Explain the parts of the house and the function of each part.**
- 3. Give reasons why you choose to design the house like you have.**

Goals:

Task 1:

Students are able to mention/describe parts of their house and the functions of the rooms.

Task 2:

Students can explain parts of traditional house and modern house.

Students can differentiate the difference between Sabu house and modern house.

Task 3:

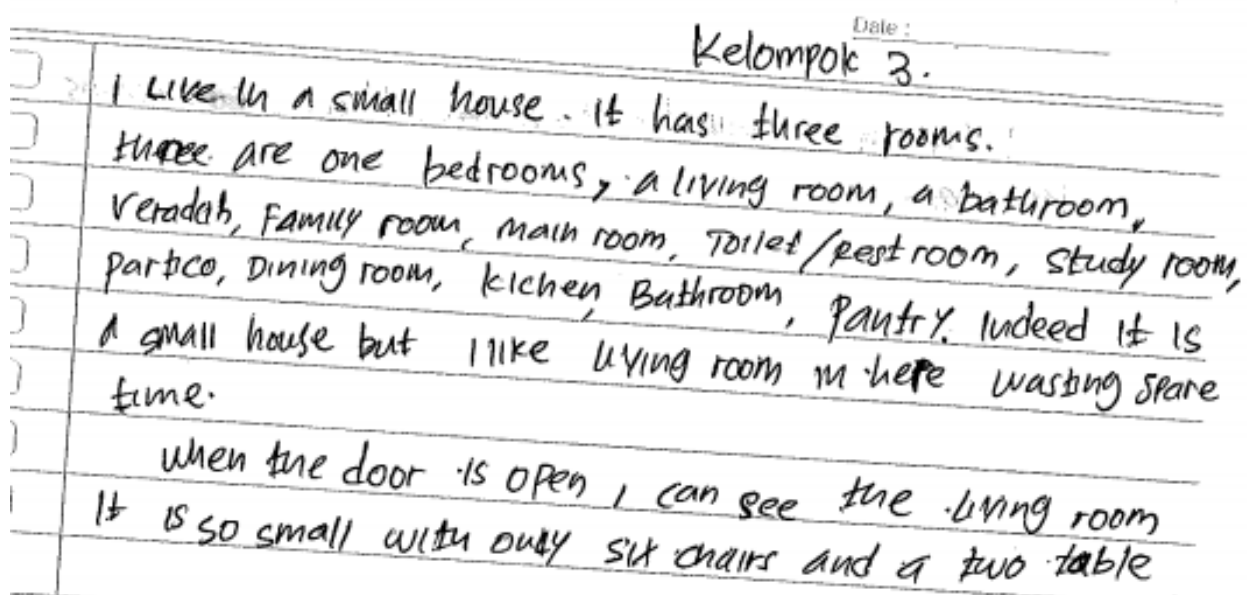
Students can evaluate the benefits and drawback of Sabu house and modern house

Students can design e new concept of house by combining traditional and modern house.

The task in Petrus' lesson first drew on LOT by asking students to recall information about their own house, then identify house parts, differentiate between a traditional house and a modern house, and explain the differences. Then the lesson began to draw on HOT by having students evaluate the benefits and drawbacks of each type of house and create their own concept of a house by combining elements of traditional and modern houses. The task was designed to help students develop their

thinking as they identified facts, then analysed and evaluated information, and then moved to creating a new concept of a house. Inspection of students' work on this task revealed that students understood the questions and instructions which helped them to do Task 1 and Task 2. An example of one student's work is shown in Figure 5.13

Figure 5.13 Students' group work in Petrus' lesson 1 - Task 1



As a result of the PLC intervention, teachers gave students the opportunity to explore new methods of brainstorming and mind mapping to help them write sentences. Inspection of classroom work by students in Petrus' class showed that the number of words and sentences written by some students had increased from pre-intervention levels. The lessons planned showed more attention than previously to encouraging students to make connections with their prior knowledge and cultural knowledge. Figure 5.14 shows one group's response to Petrus' lesson on designing a house.

Figure 5.14 Students' work in Petrus' lesson 1 – Task 2

Task 2 - Instruction:

1. Please mention parts of sabu house and modern house with its functions.
2. Please Differentiate between Sabu traditional house and modern house.
3. Please evaluate the benefits and the drawbacks between Sabu traditional house and modern house by giving check mark in the table below and then present the result to the class.

No	Benefits and drawbacks (Kekurangandankelebihan)	Rumahtradisionalsabu	Rumahmodern
1	No separation of room (Tidakadapembagianruangankhusus)	✓	
2	No ventilation (Tidakadaventilasi)	✓	
3	Lack of air flow (Sirkulasiudarakurang)		✓
4	Dark (Gelap)	✓	
5	Damp (Lembab)	✓	
6	Easy to get burn (Mudahterbakar)	✓	
7	Narrow (Sempit)	✓	
8	Limited number of doors (Jumlahpintusedikit)	✓	
9	Short life span (Jangkawaktuhuniansingkat)	✓	
10	Not economical (Tidakekonomis)		✓
11	Cool (Sejuk)	✓	
12	Environmental friendly (Ramah lingkungan)	✓	
13	Local materials (Bahanpembuatanmudahdidapat/lokal)	✓	
14	Various rooms (Pembagianruanganjelas)		✓
15	(Many windows) Banyakjendela		✓
16	Good air flow (Sirkulasiudarabaik)		✓
17	Bright and lots of sun (Terangdanbanyakcahayamatahari)		✓
18	Not easy to get burned (Tidakmudahterbakar)		✓
19	Big rooms (Ruangan Luas)	✓	✓
20	Many doors (Banyakpintu)		✓
21	Long life span (Tidakmudahrusak)		✓
22	Economical (Ekonomis)	✓	✓
23	Hot (Panaskaluartidakadaplafon)	✓	✓
24	Using glass and not environmental friendly (Tidakramahlingkungan (rumahkaca))		✓
25	Expensive materials (Bahanpembuatanrumahharusdibelimahal)		✓

Like the student work sample shown above, most of Petrus' students were able to complete the checklist about the differences between traditional and modern houses. Involving students in sustained communication in their group discussions helped them develop their analysis and evaluation skills. The students were not able to complete the final task of creating or drawing a new house concept that integrated traditional and modern concepts; this could be due to this lesson being the first step Petrus had taken to develop HOT in EFL learning. It may have been too ambitious to expect that students could produce an abstract concept like this. He reflected in his PLC cycle that he had never before learned about teaching higher order thinking in his lessons. This was his first exploration of ways to include higher order thinking activities in his lessons; he valued the support he got from his fellow EFL teachers in the PLC. This suggests that Petrus would benefit from more time to develop his ability to put into practice his plans to develop HOT.

Ruben's lesson on 'prohibition' was another example of a teacher using students' interest and active engagement in EFL learning as a result of his participation in the PLC. Students were asked to analyse prohibition signs related to school regulations, answer questions, then create their own prohibition signs. The tasks in this lesson covered LOT with students' learning activities relating to remembering, understanding, and applying their knowledge. Creating their own prohibition signs could be seen as HOT but closer inspection of Ruben's lesson plan revealed that it was just a response to a lesson task. More work would be needed for him to understand the difference between asking students to create something as they would when drawing their own signs and being creative in solving a problem in a novel way. Figures 5.15 and 5.16 show Ruben's lesson on school regulations and students' work from Ruben's class related to this topic.

Figure 5.15 Ruben's lesson on school regulations

1. DILARANG MENINGGALKAN SEKOLAH SELAMA KEGIATAN BELAJAR PADA JAM PELAJARAN EFEKTIF TANPA IJIN (DO NOT LEAVE SCHOOL DURING THE LESSON WITHOUT PERMISSION)
2. DILARANG BERKELAHI ATAU BERTINDAK YANG MENYEBABKAN KERUGIAN BAGI ORANG LAIN. (DO NOT FIGHT OR BEHAVE IN SUCH A WAY THAT COULD CAUSE DISADVANTAGE TO OTHERS)
3. DILARANG MEMBENTUK ATAU MENJADI ANGGOTA "GENG" TERTENTU. (DO NOT CREATE OR INVOLVE IN A NEGATIVE GROUP)
4. DILARANG MEMBAWA ROKOK ATAU MEROKOK ATAU GAMBAR PORNO SERTA HAL-HAL LAIN YANG MELANGGAR NORMA. (DO NOT BRING OR CONSUME CIGARETTES OR PORN PICTURES OR OTHER THINGS THAT WILL BREAK THE NORM)
5. DILARANG MENGGUNAKAN PERHISAN YANG BELEBIHAN. (DO NOT USE ACCESSORIES EXCESSIVELY)
6. DILARANG MEMBAWA SENJATA TAJAM DAN SEJENISNYA YANG DAPAT MEMBAHAYAKAN ORANG LAIN. (DO NOT BRING SHARP WEAPONS OR ITEMS LIKE THAT WHICH COULD ENDANGER OTHER PEOPLE)
7. DILARANG MAKAN ATAU MINUM DI DALAM KELAS SELAMA KEGIATAN BELAJAR BERLANGSUNG. (DO NOT EAT OR DRINK DURING THE LESSON)
8. DILARANG MEMBELI MAKANAN ATAU MINUMAN DI LUAR KANTIN SEKOLAH SELAMA JAM SEKOLAH. (DO NOT BUY FOOD OR DRINK AT CANTEEN OUTSIDE THE SCHOOL DURING SCHOOL TIME)
9. DILARANG MEMBAWA HP SELAMA KEGIATAN BERLANGSUNG DI SEKOLAH. (DO NOT BRING HANDPHONE DURING ALL SCHOOL ACTIVITIES)
10. DILARANG MEMBAWA BARANG ELEKTRONIK (AUDIO VISUAL) KECUALI MENDAPAT TUGAS DARI SEKOLAH. (DO NOT BRING ELECTRONIC STUFF (AUDIO VISUAL) EXCEPT AS ASSIGNED BY TEACHER)
11. DILARANG MEMBAWA DAN MAKAN PERMEN KARET DI SEKOLAH. (DO NOT BRING OR EAT BUBBLE GUM IN SCHOOL)
12. DILARANG MELAKUKAN KECURANGAN SAAT ULANGAN. (DO NOT COMMIT FRAUD DURING THE TEST)
13. DILARANG MEMBAWA UANG BERLEBIHAN. (DO NOT BRING MONEY EXCESSIVELY)
14. DILARANG MENGECAT RAMBUT (DO NOT COLOUR YOUR HAIR)

Figure 5.16 Students' work samples from Ruben's lesson on 'Prohibition signs'



As can be seen, the student work reveals they had developed some understanding of the topic, with most of the students being able to analyse prohibition signs and draw their own.

In another of Ruben's lessons he asked students to work in small groups to 'create' or draw their own invitation designs. Figure 5.17 shows examples of invitations developed by students in his class.

Figure 5.17 Students' work samples from Ruben's lesson on 'Invitation'





As students developed their invitations, they needed to engage in negotiation and discussion related to the task. In a later lesson Ruben planned an activity for drafting a template of letter of permission to be used in the school to respond to the fact that the school did not have any template that students could follow. This activity was an example of creating because it gave students the opportunity to solve a problem in a new way. It was disappointing to observe that Ruben did not implement

this activity in his lesson, indicating that further professional development would be needed to move teachers from planning creating activities to having them implement them in their classrooms.

Diana showed that she misunderstood 'creating' in her first lesson where she thought that asking students to write a report relating to the information they gained from interviews with their friends was HOT (see Table 5.7). This activity was not 'creating'; she would need more time and professional development to understand the concept of creativity. In her second lesson, she planned an activity where students were to produce a house concept that would be suitable for the local climate. This activity was creative because students needed to bring known elements together to create something new and solve a problem. Like the previous activity, this one was not implemented but it did illustrate that the teacher had taken steps toward developing her understanding of this aspect of HOT. In her third lesson, Diana described an activity where students would need to evaluate information related to local animals, however, the questions in this activity were mostly LOT. Another activity that she planned was about providing solutions to problems related to protecting local animals in Indonesia, especially on the island where the students lived. Again, this activity showed that Diana had some understanding of creating, because she asked students to use their knowledge to develop solutions to a problem. However, once again this activity was not implemented, indicating that she would need further support not only to make plans but to carry them out in the classroom.

Melinda planned a HOT (as shown in Table 5.7) activity where students needed to use their knowledge to create a house concept that incorporated the positive features of traditional and modern houses to tackle the climate change problem. This activity was creating but once again it was not implemented. In her third lesson, Melinda modified her second lesson in response to feedback from others in her PLC, but she still did not do the creating activity in her lesson. She also planned an

activity that involved students in creating a compilation of their personal stories; these were to be compiled into a book to share with others from different classes. This activity was 'applying' rather than 'creating', because putting together individual stories is not solving a problem in a new way. However, the activity would be likely to promote student motivation. While Melinda showed that she could plan creating activities, it seems that she may have opted to implement safer motivating activities in her classroom.

The PLC intervention had assisted teachers to design and integrate hands-on activities to help students learn. In some instances, they planned creative activities but did not implement them. It could be the case that more professional learning is needed to assist them to put their plans into action. It seems that it would be valuable for them to have more time and practice so they could develop their understanding of HOT concepts and gain confidence related to not only planning but implementing HOT.

It was observed that students in these two junior high schools (grade 7-9) increased their interest and engagement in classroom learning activities following their teachers' participation in the PLC, but there was little impact of the intervention on students' development of HOT. This could be due to teachers being at the beginning of understanding HOT and how they might plan to develop it through their teaching. The observation that all of the creating activities planned were not implemented in teachers' lessons suggests that they were not yet confident enough to make time to implement these creative lesson activities. Something is needed to help teachers take the next step of carrying out the lesson plan in the classroom, such as modelling and regular collegial support. This type of professional learning could help teachers develop their understanding of creating so that they are able to plan and implement lessons to develop it. PLC discussions could help them see the difference between asking students to create (interpreted as draw up) something and asking them to bring together ideas they have

learnt about how to solve a problem or develop something new: a creating activity.

5.5.6 The visibility of QTF for structuring a PLC in rural schools

This section addresses research question (RQ 5) relating to the usefulness of the QTF for structuring a professional learning intervention in the context of Indonesian schools, in terms of promoting respectful communication and reflection on lesson planning and teaching. Analysis of teachers' interview data showed that teachers valued the QTF as a way not only of evaluating their teaching, but also as a structure for facilitating professional learning in their schools. Ruben explained:

I think the quality teaching framework is very helpful to measure my success in teaching the students and to measure students' success in understanding what I teach them... When we give criticism to each other, and give feedback based on facts, we discuss what actually happened and we observe it together. So, it is not an assumption or an opinion only. The quality teaching framework in the PLC gave me or brought me into a new understanding about teaching and learning and is not something that can't be exposed or seen by others. So, we learn that the more we refine our teaching, it will automatically improve in quality to be better... So, it becomes not awkward to talk about students' learning, our lesson, our teaching or difficulties that we have in comparison to the time before we participated. Before, it was something that was taboo or embarrassing to talk about teaching or it was something that too much crossed other people's privacy line. (Ruben, POST1)

Melinda explained:

The most powerful part of the QTF PLC is that I could exchange my thoughts with my colleagues to develop, to help each other to do our teachers' work and to receive feedback and creative ideas from my other colleagues. (Melinda, POST1)

Comments made by the teachers showed that they valued the QTF as a way of helping them share, discuss and reflect on their teaching during their PLC cycles. They appreciated being able to address various issues in their teaching respectfully with each other without feeling uneasy about

doing this. Importantly, the QTF provided a useful structure for professional discussion and reflection within the PLC.

5.5.7 Influence of VBR in a PLC on teachers' reflective practice

This section addresses the research question (RQ 6) about the influence of VBR in a PLC on EFL teachers' reflective practice. Several sub-themes emerged from the interview data in relation to this theme and these are discussed below.

5.5.7.1 Having an opportunity to collaborate

Analysis of teachers' interview data revealed that they valued their participation in the PLC because it contributed positively to their professional development as EFL teachers. Collaboration within the PLC provided them with opportunities to work together as a team and to learn from feedback provided by their colleagues. Teachers in both PLCs agreed that the collaboration contributed positively to their teaching because they had the chance to prepare their lessons together and then evaluate their lesson videos. Steven commented:

So, the group has established plans and goals in order to improve teachers' knowledge through collaboration and being open to each other...so if I have my weaknesses, I am not ashamed to ask for advice to improve my teaching. ... They can share their strengths with me. (Steven, POST1)

The teachers commented that they had not had other experiences of professional learning that were as thorough as the one they experienced in the PLC. Melinda reported: "previously I have never experienced or participated in this kind of activity. This is the first time I participate, and it went really well" (Melinda, POST1). The teachers said they could see the advantages of working as a community to improve the quality of education in their schools. They recognised that for collaboration to work well, it was important to have an open mind; they explained that an attitude of superiority and professional arrogance should not be brought

into the PLC. Overall, the teachers expressed the view that the PLC was valuable because it gave them the opportunity to develop professionally and to support each other to develop and improve their classroom teaching.

5.5.7.2 De-privatising teaching practice

The PLC encouraged teachers to de-privatise their practice because it gave them the opportunity to observe their colleagues teaching and to be observed teaching. They were able to give and receive feedback on their teaching and not feel embarrassed. Ruben explained:

It is about de-privatisation, I think there is no reason we consider that our teaching in the classroom is a private thing because we share about the lesson and how to learn it. So, by opening our teaching practice, we create an opportunity for other PLC members to evaluate our teaching practice. We can gain new perspectives or gain probably new insight into some aspects of our teaching that we don't pay attention to. We can get useful feedback for our teaching. (Ruben, POST1)

Like Ruben, other teachers expressed the view that the PLC provided opportunities for them to receive useful and constructive feedback to improve their teaching. Petrus discussed this and said:

The comment was given to develop our teaching ability. I think the PLC has changed me... After we finished coding the video of my lesson, I got the feedback... to develop our teaching ability: the descriptive text lesson lacked brainstorming and needed to be improved... every time I get feedback on the lesson plan that we made together I would try to apply the feedback in other classes. (Petrus, POST1)

Petrus' comment shows that de-privatising his practice meant he could gain knowledge that could transfer into his teaching in other classes. The teachers indicated that they felt safe to open up and learn from one another within the PLC due to having a code of conduct to guide their interactions:

I feel happy, happy because it is indeed positive, no intimidation, no discrimination, and no mental pressure. Before the meetings,

we have made a commitment to follow it. The code of conduct is followed well by each PLC member (Melinda, POST1).

The code of conduct played a crucial role in establishing a respectful and trusting culture within each PLC and ensured that teachers had a safe learning environment that would support their collaboration. This was echoed by Steven who said: "We did not humiliate other teachers in the group" (Steven, POST1).

5.5.7.3 A platform for reflective practice

The PLC provided opportunities for the teachers to reflect on their EFL teaching practice using VBR. This brought changes in the way they evaluated their own practice and that of their colleagues because it encouraged them to evaluate the strengths and limitations of their own teaching and to improve it. This was shown in comments by Steven and Ruben:

From evaluating the teaching practice through videos, I can share that the videos of teaching practice help us to correct ourselves, and shows limitations and strengths that we have. We can reflect on it by ourselves. So, through the videos we can observe the improvement or if there is any improvement. (Steven, POST1)

By watching our colleagues' videos, we could learn from them, we could use them as a reference point. If there is any limitation in the teaching, we could pay attention to that aspect in our own teaching too. Then, we could discuss it together and get feedback such as advice and constructive criticism. To develop and reflect on ourselves, we need constructive feedback from others. (Ruben, POST1)

The teachers showed that they valued VBR because it not only provided them with opportunities to evaluate their practice in order to improve it, but they could also learn from watching their colleagues' teaching videos. Melinda explained: "After watching... my colleagues' teaching videos... I use their strengths as a lesson for me and I could adopt similar things and adjust it to my teaching" (Melinda, POST1). Seeing what other teachers did in their teaching was an important by-product of observation in the PLC where teachers watched videos of other teachers.

5.6 Discussion

Analysis of interviews, classroom observations and students' work samples showed that the PLC intervention encouraged more collaboration among teachers, helped them de-privatise their practice, and enhanced their ability to carry out reflective practice. The PLC contributed to developing teachers' PCK and facilitated teachers to shift their EFL teaching practice toward promoting a student-centred approach using hands-on activities. They started to recognise the significance of HOT in their teaching, although the teachers would need a great deal more work on developing their understanding of HOT and their ability to not only plan but also implement lessons to develop their students' creative thinking.

5.6.1 Professional learning in the PLC

Similar to findings from previous studies (Cirocki & Farrell, 2019; Djahimo, 2016; Muhammad & Ali, 2016; Rahman, 2016), this study found that PLC participants appreciated their collaboration within the PLC, due to having had limited opportunities to collaborate prior to the intervention. Through the PLC intervention, teachers were able to discuss their ideas and prepare lesson plans collaboratively and this led to them planning lessons that would involve students actively in their learning. The PLC was relevant to their classroom practice and was related to the needs of their students in the context of their classrooms; it was embedded in their school context. Teachers were encouraged to evaluate their teaching and to be reflective on their practice. A key feature of the PLC in this investigation was that it was run over six and nine weeks, allowing these EFL teachers to develop their PCK over an extended time. These findings of this study align with previous studies that have found that a PLC was effective for improving teachers' knowledge of ways to promote high quality teaching and learning (Admiraal, Schenke, De Jong, Emmelot, & Sligte, 2019; Doğan & Adams, 2018; Voelkel & Chrispeels, 2017).

The interview responses and lesson observations during the PLC cycles showed that the PLC participants began to de-privatise their teaching by observing and being observed by (via video) their colleagues in the PLC. Two types of videos were employed to guide teachers' reflective practice: each teacher's own teaching videos and teaching videos of other teachers in the PLC. This approach to VBR enabled teachers to view their teaching videos several times and to reflect on them. The process enabled teachers to have many insights that could be used to enhance their PCK. As has been found in other studies, teachers were able to identify shortcomings in their teaching because the videos gave them opportunities to identify aspects of their teaching and classroom management that needed to be changed; they could also evaluate the effectiveness of any changes made to their teaching practice resulting from PLC discussions (Marsh & Mitchell, 2014; Tripp & Rich, 2012). Watching their teaching videos provided the teachers with authentic and relevant material for reflection. This process encouraged teachers' emotional engagement in the reflective process and helped them find new ways to improve the quality of their teaching and learning activities for students in their classrooms (Zhang, Lundeborg, Koehler, & Eberhardt, 2011). Using VBR helped the teachers to think critically and to consider alternative strategies for their and their colleagues' teaching (Kleinknecht & Schneider, 2013).

The interview responses and lesson observations during the PLC cycles showed that the teachers were able to work collaboratively in a PLC that employed the QTF. The structure of the QTF helped to ensure a supportive and safe professional learning environment was created for the collaboration process when teachers viewed and interpreted the videos, as recommended by other researchers (Alles, Seidel, & Gröschner, 2019; Gaudin & Chaliès, 2015; Hockly, 2018). Using the 18 elements of the QTF that contribute to teachers' PCK (NSWDET, 2003) helped teachers to stay focused on constructive feedback and helped to minimise the power hierarchy (Gore et al., 2017; Gore & Rickards, 2020) between Indonesian

teachers. This meant that younger and older teachers were able to collaborate in the PLC and provide each other with honest feedback, because high-power distance (Hofstede, 2001) between younger and older teachers was flattened. Planning to manage the risk of hurting or humiliating teachers in front of their colleagues during collaborative reflection on teaching videos was an important step to take if positive and productive professional learning was to occur (Vedder-Weiss, Segal, & Lefstein, 2019). Ensuring that PLC participants did not experience a detrimental impact on their self-esteem was achieved because participants valued the code of conduct as a way of facilitating their PLC collaboration; importantly, it provided them with the structure for respectful communication and reflection on their lessons during PLC cycles, as reported in Section 5.5.5 This needed to be considered because these five PLC teachers live in a collectivist society (Hofstede, 2020) that emphasises the importance of creating harmony in relationships with colleagues. Another important benefit of the QTF (NSWDET, 2003) is that it gave teachers the professional terminology they could use in critical and reflective discussions.

5.6.2 Influence of the PLC with QTF as a visible structure on developing PCK

Immediately after the PLC intervention that used the QTF, the PLC participants progressed in their PCK: PCK-CK, PCK-GenPK, CurrK, PCK-KLLC, and PCK-KECC (Bowe & Gore, 2016; Gore, Bowe, & Elsworth, 2010; NSWDET, 2003). The way the QTF was used helped teachers to consider different aspects of their PCK in their lesson preparation, teaching and reflection processes. The teachers benefited from receiving feedback from their PLC colleagues and this feedback influenced their lesson preparation and the way they reflected on their revised lessons. Overall, the use of the QTF paired with the collaborative approach of the PLC contributed positively to the development of PCK in these Indonesian teachers.

The PLC intervention contributed to EFL teachers' PCK-CurrK and PCK-CK growth, which influenced their instruction quality. Through collaboration, teachers were able to share their knowledge related to their teaching topics and this helped decrease their reliance on textbooks in their teaching and to promote more student-centred learning. Previous research has found that teachers' CK contributes to their PCK (Kind, 2009; Kind & Chan, 2019; Neumann, Kind, & Harms, 2019) and that improving CK contributes to developing their PCK (Iserbyt, Ward, & Li, 2017), and they feel more confident about their teaching when they have high CK (Nilsson, 2008). In this study, increased confidence seemed to allow these PLC participants to focus on how they would teach lesson content to students. Although the collaborative PLC provided a pathway for the development of PCK for these five teachers, it seems that six or nine weeks is not long enough for teachers to develop deep PCK-CK. With teachers' CK growth over time being related to development of their PCK (Mulholland & Wallace, 2005), it seems that more extended and regular PLC collaboration would be needed for teachers to understand the concept of HOT. Having a longer time to develop this understanding would help them plan and implement strategies to develop students' ability to analyse, evaluate and create in EFL lessons.

Teachers also developed their PCK-CurrK and PCK-GenPK in PLC through designing lesson plans collaboratively. They helped each other to develop activities to teach various text genres based on the 2013 EFL curriculum. Teachers' knowledge related to teaching various text genres is important in EFL because it contributes to their ability to teach reading and writing in their lessons (Triastuti, 2014, 2017). The PLC intervention contributed to teachers' increased PCK-GenPK related to instructional models and helped them develop task quality criteria for assessment, and to employ group work and more student-centred activities in EFL lessons. Through the PLC collaboration, they were able to develop their PCK-CurrK and PCK-GenPK as they learnt about curriculum content and how they could

provide activities that encouraged students to develop their skills to analyse different text genres and provide explicit task criteria for assessing students' work.

During the PLC collaboration, the EFL teachers began to develop their PCK-ECC and PCK-KLLC because they were encouraged to integrate cultural aspects into their lessons and to use materials that were relevant and interesting to students. They began to include local and other cultural and contextual knowledge into their teaching of a variety of topics. As suggested by previous studies, hands-on activities led to some successful learning experiences because students were interested in their lessons (Appleton, 2003; Van Driel & Berry, 2010). However, the teachers needed more time in professional learning to develop deep knowledge and implement it effectively.

This PLC intervention employed the structure of the QTF to increase the PCK of these rural teachers in this remote regency in eastern Indonesia. As Gore et al. (2017) found when using the QTF with Australian teachers, there were significant within-group effects on teachers' teaching quality across time resulting from their participation in a collaborative discussion forum (Gore et al. used Quality Teaching Rounds). The results of the present study support the finding by Gore et al. that the QTF can be used for teachers' professional learning in different contexts and in different subject areas. This study has contributed to filling a gap in the research related to how a PLC using the QTF can encourage the development of PCK in teachers in a country very different from the one in which it was developed, that is in rural schools in remote areas of Indonesia.

5.6.3 Influence of a PLC on beliefs and attitudes related to teaching HOT

This study found that due to participation in the PLC, these EFL teachers had begun to change their beliefs related to teaching HOT and had developed their collective responsibility for providing good quality learning

for their students. Through viewing videos of their teaching and that of their colleagues, and through PLC discussions, they became more aware of the need to be accountable in their teaching practice. VBR also assisted teachers to identify whether their teaching promoted HOT learning or not; if they had more time they might have discussed in more detail why HOT activities were planned but not taught.

Teachers who participate in professional learning that promotes active learning and reflective practice on their teaching, are more likely to change their beliefs (de Vries, van de Grift, & Jansen, 2014). To do this, teachers need to have opportunities to examine their beliefs explicitly, which could promote sustainable changes in their practice: 'without addressing the underlying deficit beliefs that influence teachers' behaviour, launching school-based curriculum does little towards changing practice once teachers return to classrooms and close their doors" (Tam, 2015b, p. 37).

After the PLC intervention, the EFL teachers expressed positive attitudes towards designing and teaching HOT although there was little evidence of implementing their plans to teach HOT. The teachers showed that they were able to focus more widely on students' learning than merely preparing them for national examinations. Their perspectives of EFL teaching and learning shifted from a behaviourist focus to a more constructivist one as a result of the PLC intervention (Doğan et al., 2016; Voelkel & Chrispeels, 2017). This move to more constructivist beliefs related to their practice (Barr & Askill-Williams, 2020) and to changes in beliefs about assessment practices (Rahayu Saputra, Abdul Hamied, & Suherdi, 2020) is similar to the findings of other research. The belief that "a traditional teacher is a source of knowledge" was shifting toward the belief that the teacher's major role is to involve students actively in their learning. "Consequently, teachers must also learn to replace their traditional assessment practices with reformed ones that would match their new teaching goals" (Zohar & Schwartz, 2005, p. 1597).

The PLC intervention influenced teachers' beliefs about rural students' ability to learn HOT. Prior to the PLC, teachers had expressed the belief that students with low academic achievement were not capable of learning HOT. However, after the PLC, the teachers who observed positive changes in their classrooms were beginning to change their beliefs related to their students' capacity to learn HOT in EFL lessons. This supports Zohar and Dori's (2003) finding that students with low academic achievement are able to learn HOT.

Teachers' collaboration in the PLC contributed to their developing knowledge of HOT and self-efficacy for teaching it. Low self-efficacy for teaching HOT is likely to contribute to low teaching quality related to it and to a focus on LOT. Further participation in a PLC could continue to develop their understanding of HOT to the point where they could put into practice plans to implement HOT in their EFL teaching. Teachers' self-efficacy seemed to be a mediating influence on their agency related to implementing changes in their classrooms (Min, 2019).

5.6.4 Influence of a PLC on developing HOT instruction and students' HOT

Teachers expressed increased willingness to teach about HOT in their classrooms due to the support they received from their colleagues in the PLC. This reflects the findings and recommendations of previous research (Doğan & Adams, 2018; Doğan et al., 2016; Rahayu Saputra et al., 2020; Vescio et al., 2008). Although they progressed in their knowledge of HOT in comparison to pre-intervention, they needed to develop deep understanding of HOT concepts to effectively integrate and implement HOT in their instruction. This study has shown that developing knowledge and understanding of HOT is a very important first step to implementing it in classroom teaching; HOT in EFL being a new concept for these teachers could partly account for the observation that teachers did not implement it in their teaching even though some of them planned it. Focusing on developing teachers' understanding of HOT should be a high priority in

future PLCs on developing pedagogy focused on teaching HOT. Consideration also needs to be given to teachers' self-efficacy for implementing a new practice such as this.

This study found that hands-on activities planned in the PLC encouraged development of some aspects of students' HOT skills, similar to previous studies (Barnett & Francis, 2012; Wang & Liao, 2014). Through their participation in the PLC, teachers were able to explicitly state HOT learning objectives and begin to employ practical tools to ensure students understood the purpose of their learning activities and were able to do the learning tasks (Zohar, 1999; Zohar & Dori, 2003). There was a positive relationship between teachers' engagement in the PLC and changes in their practice (Lomos et al., 2011; Vescio et al., 2008), and an observed increase in EFL students' involvement in their learning (Doğan & Adams, 2018; Dogan et al., 2016). It has been mentioned that teachers planned HOT activities to develop 'creating' but did not implement them in their lessons, however, it must be remembered that when these teachers began their PLC collaboration, they had very little understanding of HOT or experience in teaching it. It takes time to understand and implement new ideas such as HOT; including them in new curriculum directives does not mean teachers have the knowledge or attitudes needed to be able to implement immediately.

5.6.5 The influence of VBR in a PLC on teachers' reflective practice

This study has found that teachers valued the use of VBR in their own reflections because they had opportunities to evaluate not only their own teaching, but also their colleagues' teaching. Previous studies have also reported benefits of teachers' teaching videos for teachers' professional learning due to VBR allowing teachers to observe their own practice or that of their colleagues and encouraging productive discussions among teachers during professional learning (Arya, Christ, & Chiu, 2016; Christ, Arya, & Chiu, 2017; Gaudin & Chaliès, 2015). VBR facilitates teachers to

interrogate their own teaching approach, and their beliefs and assumptions which could help them identify areas where they need to make improvements (Cutrim Schmid, 2011). Similarly, previous studies indicated that teachers who employ classroom videos to reflect on their teaching and that of others report positive outcomes for teacher development (e.g., Borko et al., 2008; Seidel et al., 2011). Also, videos of teaching remind teachers of specific events during classroom activities and help them understand their teaching; this finding is similar to those of another study that found that VBR helped teachers refine their practice because they received practical and contextual feedback during group discussions (Tripp & Rich, 2012). In conclusion, VBR has proven to be a useful tool for teachers' professional learning and this study supports this finding.

The results of Study 2 indicated that it would be valuable to investigate the long-term impact of the PLC on EFL teachers' PCK, and Study 3 took up this challenge.

5.7 Summary

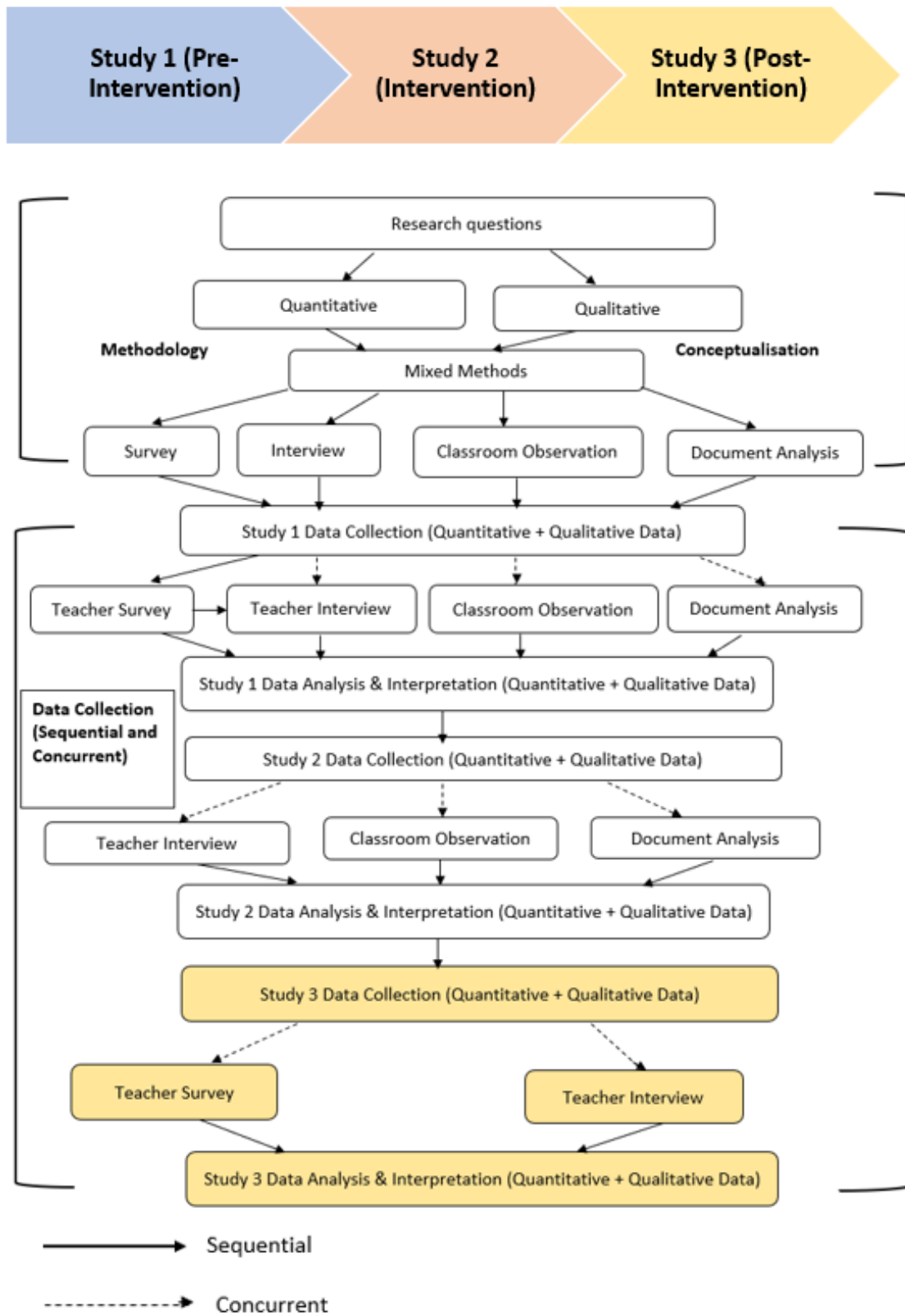
This chapter has shown that teachers developed their PCK in response to a six-week (School A) or nine-week (School B) intervention. They began to change their beliefs that their students were not capable of learning HOT and were developing positive attitudes to reflective practice in their teaching. They were at the beginning of developing their understanding of HOT and how to teach it in EFL classes; it is clear that more time would be needed to support the successful implementation of HOT in their EFL classrooms. The next chapter reports on the long-term impact of the PLC intervention and its sustainability over time (one year).

CHAPTER 6 A PROFESSIONAL LEARNING COMMUNITY SUSTAINABILITY IN RURAL INDONESIA: EFL TEACHERS' PERCEPTIONS

6.1 Introduction

This chapter presents the third of three studies reported in this research. The overarching aim guiding this study was to identify the long-term effects and sustainability of a professional learning community (PLC) intervention on EFL teachers' pedagogical content knowledge (PCK) for teaching higher order thinking (HOT) in EFL classrooms in rural schools in Indonesia. Figure 6.1 shows the position of Study 3 and its connection with the other studies in this investigation.

Figure 6.1 The links between Study 1, Study 2 and Study 3



6.2 Literature review

In this chapter the focus is on Study 3, i.e., the post-intervention study. A brief literature review follows in which there is discussion of sustainability factors for educational initiatives and challenges for PLC sustainability in a rural context. This literature informed the research questions and design of Study 3.

6.2.1 Sustainability factors for educational initiatives

The ultimate goal of educational initiatives is to improve education quality. However, some educational initiatives for school improvement cannot be sustained and are short-lived because of poor program sustainability (Askell-Williams & Koh, 2020). Even though these educational programs contribute positively and immediately to improving teachers' teaching quality and students' learning outcomes, sustaining these initiatives can be challenging. As Chambers et al. (2013) explained:

Often studies evaluate only initial intervention adoption and implementation. Sustained practice change and broader scale-up of interventions rarely are investigated, often due to the constrained timeframes for research that are set by grant mechanisms, and the budgetary and political necessity of many decision-makers to take on a short-term lens. (p. 1)

One of the ways to sustain changes in a school is through creating a PLC (Lee & Louis, 2019), because it encourages positive school culture (shared responsibility, de-privatised practice and reflective dialogue) that contributes to sustainable school improvement. It has been found that the sustainability of an innovation can be influenced by many factors such as: different aspects of project design and characteristics that include considerations of local needs, sources of funding, program evaluation and program duration, program funding, project type and program training, factors within the organisational setting such as having a program champion or leadership support, having a coherent organisational mission and organisational capacity, and factors in the broader community environment related to socio economic and political factors as well as

having support from local community leaders (Scheirer, 2005; Shediac-Rizkallah & Bone, 1998).

Leadership in schools is an important factor that needs to be considered if continued school improvement is to be encouraged through strategic decisions and school policy that address each school's internal circumstances and external context (Gu & Johansson, 2013).

Consideration needs to be given to factors in the external school context, such as socio-economic status, characteristics of students, parental engagement, and the relationship between a school and its local community (Gu & Johansson, 2013). Internal school influences on sustainability are related to school leadership, professional development, collegiality, school morale and commitment, and student learning outcomes (Gu & Johansson, 2013). An important finding by Askill-Williams (2017) was that educational initiatives in schools may be discontinued if there are changes within the school leadership or the person in charge of a program moves to a different school, or if there is a lack of on-going support for professional learning and a lack of continuing program evaluation and renewal. Strategic decisions made by school leadership can influence these internal and external factors positively or negatively (Gu & Johansson, 2013, p. 305). School leaders who have a deep understanding of the school's internal and external context and a strong commitment to transforming the school (Gu & Johansson, 2013) are more likely to bring sustainable change in school performance. Overall, school leadership and contextual (external) and institutional factors (internal) contribute to the long-term sustainability of educational initiatives.

Although educational policy changes and limited funding can hinder the sustainability of educational reform efforts (Datnow, 2005), a collective approach that synchronises school, local, provincial and national education policy could mitigate this. It has been found that higher school performance is promoted when schools have a PLC that encourages

shared responsibility, reflective dialogue, de-privatising of practice, collaboration, and support for students (Lee & Louis, 2019).

While Study 2 reported on the immediate impact of a PLC intervention on teachers' PCK and students' learning, there are few research studies that have reported on the long-term impact of intervention programs. This study provides a significant contribution to the research on sustainability by documenting over an extended period of time a PLC intervention that aimed to increase teachers' PCK related to teaching HOTS in EFL classes in rural Indonesia. Research of this type on teaching and school improvement has not been undertaken previously in the region.

6.2.2 Challenges for sustainable implementation of a PLC in rural eastern Indonesia

Rural contexts pose challenges for EFL teachers wishing to pursue professional learning so they can provide quality teaching for their students (Halvorsen, McArthur Harris, Doornbos, & Missias, 2021). External factors, such as schools being in low socio-economic areas or in remote or rural locations, have been found to influence school performance (Harris et al., 2006). A recent study employing a PLC for teachers' professional development in rural areas in Michigan, USA showed that schools being located at large distances from each other interfered with the PLC collaboration process (Halvorsen et al., 2021) because teachers could not observe other teachers' practices. Also, time schedules hindered the teachers from collaborating (Halvorsen et al., 2021).

Febriana, Nurkamto, Rochsantiningsih, and Muhtia (2018) investigated barriers to EFL teaching in disadvantaged areas of Indonesia and described these as being related to a lack of adequate infrastructure, such as limited facilities in the school, no availability of public transport, and no electricity or internet access. Other barriers were related to a shortage of educational resources, such as learning materials and out-of-date

textbooks and dictionaries, and students speaking their traditional language but having limited Indonesian language proficiency (Febriana et al., 2018). These language issues in Indonesia mean that EFL teachers need to speak three languages (local vernacular, Indonesian and English), and if they do not have proper knowledge of the local vernacular, it is hard for them to communicate with students in their classrooms (Febriana et al., 2018). Another barrier involved lack of parental support for student education in rural areas because parents did not see the relevance of formal education to their lives. Added to this is the finding that the shortage of teachers in Indonesian rural schools contributed to the mismatch between the educational backgrounds of teachers and the subjects they were asked to teach (Febriana et al., 2018). Rural teachers often have low salaries due to being casually employed and this impacts on their teaching quality and has resulted in frequent absences from school. Febriana et al. (2018) identified that students in rural and remote Indonesian schools had low EFL proficiency because they began learning EFL in junior high school rather than in primary school; this meant that teachers needed to teach students basic EFL knowledge even though the secondary school EFL curriculum required students to have a level of EFL proficiency before entering high school. The fact that students in Indonesian rural schools lacked interest in learning EFL and considered it to be a hard subject made the EFL teacher's job even harder (Febriana et al., 2018). The complexity of rural teaching could make it difficult to sustain a PLC innovation in these schools.

An evaluation study (Hidayah & Marhaeni, 2016) of a program to educate graduates in frontier, outermost, and disadvantaged regions (SM-3T) of Indonesia revealed that the SM-3T program meant that graduate teachers made positive contributions to the rural schools where they were placed. The placement helped them to become familiar with the context of the schools and developed their understanding of their responsibility as teachers in rural areas (Hidayah & Marhaeni, 2016). One criticism of the

program was that it was too broad, which made it difficult for teachers to implement what they had learned due to the particular characteristics of rural areas (such as local vernaculars, cultures and customs). It was recommended that the program should be adjusted so that it could cater specifically to different community groups and cultural contexts (Hidayah & Marhaeni, 2016).

In addition, a recent comprehensive study on the quality of primary education in remote Indonesia conducted by the World Bank (2019) revealed that inadequate infrastructure contributed to the low quality of teaching and learning in remote areas of Indonesia. The study noted that teachers in East Nusa Tenggara had a high rate of absenteeism that impacted on their availability to teach their rural students and that teachers' inadequate teaching qualifications contributed to students' low achievement in numeracy and literacy (The World Bank, 2019). A study looking into the reasons for teachers' absenteeism in rural Indonesian schools revealed that they had low motivation for their teaching because they had low salaries and experienced delayed payments, which meant that they needed a second job to cover their daily costs (Febriana, Karlina, Nurkamto, & Rochsantiningasih, 2018). Compounding this difficulty, their remote location forced teachers to travel long distances to buy basic needs with the result that they missed teaching scheduled classes (Febriana, Karlina, et al., 2018). Sometimes they were forced to neglect their teaching in the rainy season because they lived far from their school, road conditions were poor and floods or natural disasters would cut off their access to the school (Febriana, Karlina, et al., 2018).

Overall, these studies show that there are special challenges for teachers working in rural schools in Indonesia. This present study identifies the challenges faced by teachers in rural eastern Indonesia and makes recommendations for promoting the sustainability of PLCs in schools, and is an original contribution to research on the sustainability of educational innovations.

6.3 Research aim and questions

The overall aim of this chapter is to identify the long-term effects and sustainability of a PLC intervention to develop HOT, on EFL teachers' PCK in rural schools in Indonesia.

The research questions guiding the study reported in this chapter were:

- RQ 3. 1 How sustainable are any gains from a PLC intervention designed to strengthen EFL teachers' PCK and develop their teaching practices in rural areas in Indonesia?
- RQ 3. 2 What are the challenges to sustaining the implementation of a PLC in rural schools in eastern Indonesia?
- RQ 3. 3 What recommendations can be made to promote the long-term sustainability of a PLC in rural schools in Indonesia?

6.4 Methods

This section describes the methods for participants' recruitment, data collection procedures, preparation, and analysis. There were two phases in Study 3 with two groups from whom data were collected. The first phase used a survey with a large group and the second phase collected data via interviews with a smaller group. Ethical protocols were followed, as described in Chapter 3. Teachers were reminded that they had the right to not answer questions, withdraw from the study and request that the interview be stopped at any time, without negative consequences to them (they had been assured of this process at the time of their recruitment via informed consent). Table 6.1 summarises the research questions, the research methods used to collect data and the data analysis techniques used in Study 3.

Table 6.1 Research questions, methods and analysis used in Study 3

Research questions	Methods				Analyses			
	Survey Questionnaire	Interview	Classroom observation	Document analysis	Descriptive statistical analysis	Repeated measure ANOVA statistical analysis	ANCOVA statistical analysis	Thematic analysis
1. How sustainable are any gains from a PLC intervention designed to strengthen EFL teachers' PCK and develop their teaching practices in rural areas in Indonesia?	✓	✓					✓	✓
2. What are the challenges to sustaining the implementation of a PLC in rural schools in Indonesia?		✓						✓
3. What recommendations can be made to promote the long-term sustainability of a PLC in rural schools in Indonesia?		✓						✓

6.4.1 Phase 1 of the study - Survey

6.4.1.1 Survey data collection procedure

The same data collection procedure was employed as for the pre-intervention survey in Study 1. This was done to provide comparison data for the post-intervention study.

6.4.1.2 Survey Participants

The same fifty-two EFL teachers from Study 1 completed and returned the post-intervention survey.

6.4.1.3 Survey data preparation

The data from the post-intervention survey were prepared using the same procedures as for the pre-intervention survey data. The researcher used the same codebook for scoring and then ran the analysis of missing data in SPSS version 25 (IBM, 2018) to identify any missing data from the post-intervention survey responses. The analysis showed that 11 variables were missing. From 3,796 values in the post-intervention survey responses, 28 values were missing (0.75 % overall). In order to retain as much data from surveys as possible, a pairwise deletion was applied as suggested by Kang (2013).

6.4.1.4 Survey data analysis

The survey data were examined to gain an understanding of whether there were any changes in the 52 EFL teachers' existing professional learning activities and their PCK in Bintang regency between pre-intervention and post-intervention. The data were analysed using SPSS version 25 (IBM, 2018). Bootstrapping was performed to address outliers in the data (Haukoos & Lewis, 2005; Moore, McCabe, & Craig, 2009) because: "The bootstrap is a computationally intensive statistical technique that allows the researcher to make inferences from data without making strong distributional assumptions about the data or the statistic being calculated" (Haukoos & Lewis, 2005, p. 360). It was

performed on data from 52 teachers using 5,000 for bootstrapping to calculate an unbiased estimation of the confidence interval (95%).

After that, data were analysed using an analysis of covariance or ANCOVA test (Field, 2009) to identify the changes in teachers' responses between the pre- and post-PLC intervention surveys.

A better approach is to use analysis of covariance (ANCOVA), which, despite its name, is a regression method. In effect two parallel straight lines (linear regression) are obtained relating outcome score to baseline score in each group.... An additional advantage of analysis of covariance is that it generally has greater statistical power to detect a treatment effect than the other methods. (Vickers & Altman, 2001, p. 1123)

ANCOVA provides an accurate measure for any changes in survey data including changes that may have occurred for other reasons and can reduce systematic bias due to non-randomisation in the post-test difference (Dimitrov & Rumrill Jr, 2003) addressing issues related to baseline imbalance. Since there was limited randomisation between groups in the study, ANCOVA was useful for ensuring compatibility between treatment and control groups (Vickers & Altman, 2001).

The ANCOVA of pre-intervention and post-intervention survey data for all combined variables from the survey can be found in Appendix 19. This analysis was employed because the teachers were not assigned to groups randomly and the study employed a nonrandomized control group pre-test-post-test design (Dimitrov & Rumrill Jr, 2003; Vickers & Altman, 2001). "With nonrandomized designs, the main purpose of ANCOVA is to adjust the post-test means for differences among groups on the pre-test, because such differences are likely to occur with intact groups" (Dimitrov & Rumrill Jr, 2003, p. 161). Also, the analysis was used because the advantage of "ANCOVA over ANOVA on gain scores is that when some assumptions do not hold, ANCOVA allows for modifications leading to appropriate analysis, whereas the gain score ANOVA does not" (Dimitrov

& Rumrill Jr, 2003, p. 161). To identify any changes, the significance value of less than .05 (Field, 2009) was adopted.

6.4.2 Phase 2 of the study - Interviews

6.4.2.1 Post-intervention interview data collection procedures

One-on-one interviews (see Chapter 3) were conducted. The interview procedures were the same as those undertaken in Study 1 and Study 2. Some questions in Study 3 were the same as questions in Study 1 (see Table 4.3 in Chapter 4) but there were some additional questions in Study 3 relating to teachers' PLC experience. Examples of the English translation of questions used in the Study 2 interviews are presented in Table 6.2. Full interview questions can be found Appendices 6 and 7. Although teachers were not required to supply their lesson plans for document analysis in Study 3, two teachers decided to bring their lesson plans to the interview. In this way they became supporting documents for the interview. They were not used for document analysis.

Table 6.2 Examples of interview questions in Study 2 (English translation)

1. How are you going with the QTF PLC? Are you still using it?
2. How are you going with using QTF PLC without having a facilitator?
3. Can you give examples of how you are using the QTF PLC in your teaching?
4. How do you feel about using the QTF in the PLC?
5. Have you continued to use the QTF in a PLC or in your professional learning? If yes, why? And If No, why not?
6. How do you think you have changed the way you teach after the intervention finished?
7. Has the QTF PLC had an impact on your teaching? If yes –how? If no – can you make any comment on why not?
8. Have you experienced any challenges or benefits from implementing the QTF PLC after the intervention? If yes, how? If no, why not?
9. What are the benefits of QTF PLC for your teaching?
10. Have you had any challenges using the QTF in the PLC or in your professional learning?
11. What are the challenges of QTF PLC for your teaching?
12. How have you dealt with the challenges?

6.4.2.2 Post-intervention interview participants

The five EFL teachers from Study 2 were invited to be interviewed and had completed the consent forms (Appendices 16n and 16o). Four out of five EFL teachers agreed to be interviewed. One teacher cancelled the interview due to a health reason. The researcher had offered to postpone the interview several times during the visit to the research site and even to conduct the interview via phone when she was healthy. She was not inclined to continue her participation. Table 6.3 shows demographic information provided by the four teachers from two schools who volunteered to participate in the interview phase of this research.

Table 6.3 Demographic information from participants who volunteered for Phase 2 of Study 3

Participants	Gender	Age	Years of teaching experience	Working status	Grade taught/Role
School A					
Petrus	Male	25	1.5	School contract teacher	8
School B					
Melinda	Female	30	6	Regency-based contract teacher	7
Steven	Male	56	25	Civil servant teacher	7 (Jan-March) School Principal
Ruben	Male	29	4	Civil servant teacher	9

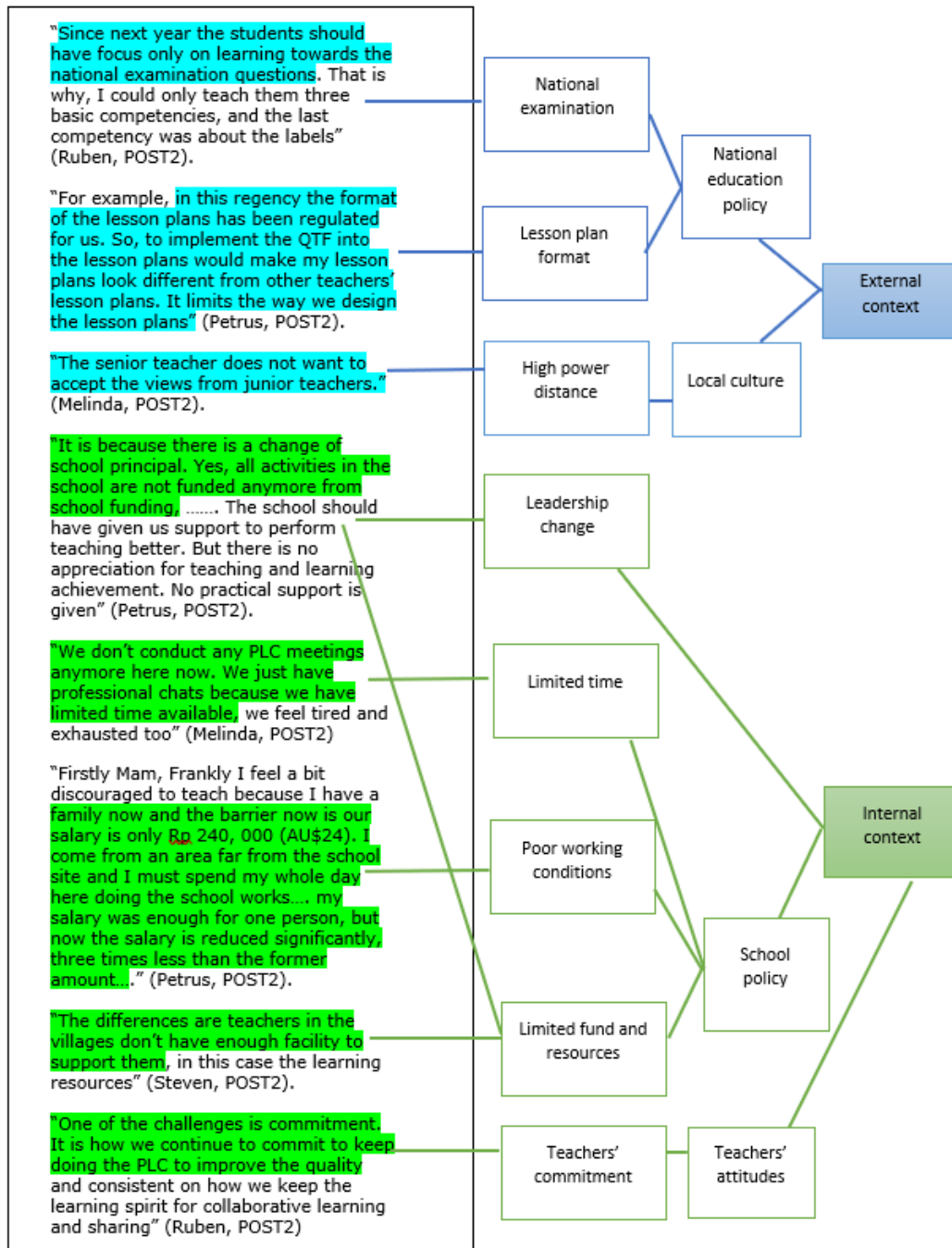
6.4.2.3 Interview data preparation

The interview data preparation was the same as described for Studies 1 and 2.

6.4.2.4 Interview data analysis

The qualitative data analysis employed thematic analysis following recommendations by Creswell (2012) and was conducted in NVivo version 12 (QSR, 2018), as described in Study 1. Figure 6.2 shows an example of the Study 3 coding process.

Figure 6.2 An illustration of coding of the data in Study 3



Following the identification of patterns and generation of common themes from the data, the interview text was coded in categories based on the QTF elements (student direction, HOT, etc.) (Gore et al., 2016; NSWDET, 2003). These categories were classified under the sub-themes of teacher knowledge (Knowledge of EFL instructional models and strategies) (Shulman, 1987, 2015). The text was coded in sub-themes based on literature about challenges in rural areas (e.g., national examinations, lesson plan format, high power distance, leadership, limited time, poor working conditions, etc) and organised according to small themes such as national education policy, local culture, leadership support, school policy, teachers' attitude. Finally, it was classified under the major themes of internal and external context.

6.5 Findings

This section reports the findings from Study 3 based on the research questions investigated in Phase 1 of this study with the large group of teachers (n=52), and Phase 2 of this study with a small group of teachers (n=4). Each research question is addressed in a separate section, i.e., RQ1 in section 6.5.1; RQ2 in section 6.5.2; and RQ3 in section 6.5.3. The findings reported relate to survey data and individual interviews.

6.5.1 Sustainability of gains from a PLC intervention on EFL teachers' PCK and their teaching practices in rural areas in Indonesia

This section reports on findings from survey and interview analysis to answer research question (RQ 1) about the sustainability of any gains from a PLC intervention designed to strengthen EFL teachers' PCK and develop their teaching practices in rural Indonesia.

6.5.1.1 The sustainability of gains from the PLC on EFL teachers' PCK

This section reports on ANCOVA analysis of the Quality Teaching survey which was employed to identify any differences between the pre- and post-PLC intervention on 52 EFL teachers' PCK. The ANCOVA result on the

teaching quality survey showed that no significant differences (p-value) were identified for the PLC intervention group in relation to 17 out of 19 groups of survey items. There were significant differences in two groups of survey items measured in pre- and post- PLC intervention. The detailed outcomes and explanation of the results from ANCOVA for these groups of survey items can be found in Appendix 19. Table 6.4 shows a summary of ANCOVA results for the Quality Teaching teacher survey with items showing significant differences highlighted in bold.

Table 6.4 Analysis of covariance results for all variables

Variables	Test of between-subject effects	Type III Sum of Squares	Degree of Freedom (df)	Mean Squares	F	p-level/ Bootstrapped p-value
QTF elements	Treatment	0.652	1	0.652	3.144	.082/.097
	Error	10.162	49	.207		
Quality Teaching for Intellectual Dimension	Treatment	.615	1	.615	2.165	.148/.133
	Error	13.915	49	.284		
Quality Teaching for Quality Learning Environment	Treatment	1.215	1	1.215	4.213	.045/.081
	Error	14.129	49	.288		
Quality Teaching for Significance Dimension	Treatment	.980	1	.980	2.741	.104/.043
	Error	17.516	49	.357		
PLC de-privatised practice (for teaching observation and getting observed by another colleagues)	Treatment	7.669	1	7.669	1.681	.201/.270
	Error	223.536	49	4.562		
PLC de-privatised practice (receiving feedback on performance from supervisors or peers)	Treatment	1.268	1	1.268	.956	.333/.505
	Error	64.969	49	1.326		
PLC collaborative activity (received useful suggestions for curriculum materials, for teaching practice or learning activities, and for assessment materials from immediate colleagues per year)	Treatment	.292	1	.292	.242	.625/.694
	Error	59.001	49	1.204		
PLC collaborative activity (lesson planning, curriculum development, guidance and counselling, evaluation of	Treatment	3.034	1	3.034	.559	.458/.593

programs, planning assessment, other collaborative work related to instruction per month)						
	Error	265.905	49	5.427		
PLC reflective dialogue	Treatment	.204	1	.204	.112	.740/.559
	Error	89.288	49	1.822		
PLC structural conditions (typical scheduled time for collaborative lesson planning with other teachers)	Treatment	4.735	1	4.735	.822	.369/.135
	Error	282.110	49	5.757		
PLC structural conditions (average meeting for a planning period with other teachers)	Treatment	.684	1	.684	.970	.330/.220
	Error	34.554	49	.705		
PLC structural conditions (average meeting time to plan with other teachers within the schools)	Treatment	.022	1	.022	.007	.932/.896
	Error	145.038	49	2.960		
PLC Teacher trust	Treatment	.054	1	.054	.100	.753/.669
	Error	26.362	49	.538		
PLC teacher respect	Treatment	.005	1	.005	.021	.884/.879
	Error	10.628	49	.217		
PLC openness to innovation	Treatment	3.209	1	3.209	2.164	.148/.005
	Error	66.714	45	1.483		
Teacher responsibility for students' learning	Treatment	.012	1	.012	.047	.829/.846
	Error	12.559	49	.256		
Aspiration for teachers' future professional learning	Treatment	1.363	1	1.363	4.629	.036/.225
	Error	14.428	49	.294		
Aspiration for teachers' future job retention	Treatment	1.852	1	1.852	3.450	.069/.243
	Error	26.310	49	.537		

Aspiration for teachers' future leadership	Treatment	1.589	1	1.589	1.322	.256/.202
	Error	55.273	46	1.202		

Note: Significant at $p < 0.05$

As can be seen in Table 6.4 there was a significant difference in teachers' PCK as measured by the **Quality Teaching (QT) dimension of quality learning environment** variable [$F(1,49)=4.213, p=0.045$] and there was a significant difference in EFL **teachers' future professional learning** variable [$F(1,49)=4.629, p=0.036$], however the bootstrapped p-value did not show any significant difference in EFL **teachers' future professional learning** variable, which means it was not a significant difference. This could be due to the limitation that the sample size was small ($n=5$) for the treatment group.

To detect the differences which occurred between groups, the effect size was calculated as recommended by Morris (2008) for pre-intervention and post-intervention control group and intervention, and interpreted using Cohen's *d*. Table 6.5 shows Cohen's *d* on the Quality Teaching teacher survey.

Table 6.5 Quality Teaching Survey mean, standard deviation and effect size between control and PLC intervention group

	PLC Intervention				Cohen's d	Bootstrap Pairwise Comparison Mean Difference (I-J)	95% Confidence Interval	
	Control (N=47)		PLC Intervention (N=5)				Lower	Upper
	Mean	Standard Deviation	Mean	Standard Deviation				
QTF elements pre-intervention	3.64	.49	3.15	.31	0.31 (small)	.397	-.119 ^b	.942 ^b
QTF elements post-intervention	3.73	.50	3.09	.61	0.31 (small)	-.397	-.942 ^b	.119 ^b
Quality Teaching for Intellectual Dimension pre-intervention	3.39	.60	2.73	.32	0.05	.389	-.132 ^b	.946 ^b
Quality Teaching for Intellectual Dimension post-intervention	3.60	.57	2.97	.57	0.05	-.389	-.946 ^b	.132 ^b
Quality Teaching for Quality Learning Environment pre-intervention	3.83	.57	3.63	.55	0.64 (medium)	.521	-.138 ^b	1.161 ^b
Quality Teaching for Quality Learning Environment post-intervention	3.74	.53	3.17	.75	0.64 (medium)	-.521	-1.161 ^b	.138 ^b
Quality Teaching for Significance pre-intervention	3.72	.56	3.09	.47	0.20 (small)	.491	.017 ^b	1.043 ^b
Quality Teaching for Significance post-intervention	3.87	.64	3.13	.55	0.20 (small)	-.491	-1.043 ^b	-.017 ^b
PLC de-privatised practice (for teaching observation and getting observed by another colleagues) pre-intervention	1.26	2.13	.50	.71	0.85 (large)	-1.311	-3.911 ^b	.908 ^b
PLC de-privatised practice (for teaching observation and getting observed by another colleagues) post-intervention	1.68	2.22	2.70	2.64	0.85 (large)	1.311	-.908 ^b	3.911 ^b
PLC de-privatised practiced (receiving feedback on performance from supervisors or peers) pre-intervention	1.72	1.42	1.60	1.34	0.43 (small)	-.530	-2.333 ^b	.717 ^b

PLC de-privatised practiced (receiving feedback on performance from supervisors or peers) post-intervention	2.11	1.18	2.60	1.52	0.43 (small)	.530	-.717 ^b	2.333 ^b
PLC collaborative activity (received useful suggestions for curriculum materials, for teaching practice or learning activities, and for assessment materials from immediate colleagues per year) pre-intervention	1.74	1.11	1.73	1.19	0.22 (small)	.254	-1.208 ^b	1.331 ^b
PLC collaborative activity (received useful suggestions for curriculum materials, for teaching practice or learning activities, and for assessment materials from immediate colleagues per year) post-intervention	2.19	1.15	1.93	1.23	0.22 (small)	-.254	-1.331 ^b	1.208 ^b
PLC collaborative activity (lesson planning, curriculum development, guidance and counselling, evaluation of programs, planning assessment, other collaborative work related to instruction per month) pre-intervention	2.56	2.04	1.87	.94	0.60 (medium)	-.824	-4.375 ^b	1.982 ^b
PLC collaborative activity (lesson planning, curriculum development, guidance and counselling, evaluation of programs, planning assessment, other collaborative work related to instruction per month) post-intervention	3.19	2.39	3.70	3.25	0.60 (medium)	.824	-1.982 ^b	4.375 ^b
PLC reflective dialogue pre-intervention	2.36	1.17	1.80	1.10	0.20 (small)	.214	-.540 ^b	.976 ^b
PLC reflective dialogue post-intervention	2.13	1.39	1.80	.84	0.20 (small)	-.214	-.976 ^b	.540 ^b
PLC structural conditions (typical scheduled time for collaborative lesson planning with other teachers) pre-intervention	3.89	2.57	2.80	2.17	0.05	1.032	-.490 ^b	2.445 ^b
PLC structural conditions (typical scheduled time for collaborative lesson planning with other teachers) post-intervention	4.02	2.49	2.80	1.30	0.05	-1.032	-2.445 ^b	.490 ^b

PLC structural conditions (average scheduled time per week to plan and prepare with other teachers during work time) pre-intervention	.85	1.18	.40	.89	0.25 (small)	-.070	-1.050 ^b	.920 ^b
PLC structural conditions (average scheduled time per week to plan and prepare with other teachers during work time) post-intervention	.64	.85	1.00	.71	0.25 (small)	.070	-.920 ^b	1.050 ^b
PLC structural conditions (average meeting time to plan with other teachers within the schools) pre-intervention	1.43	1.78	.80	1.30	0.69 (medium)	-.392	-1.017 ^b	.307 ^b
PLC structural conditions (average meeting time to plan with other teachers within the schools) post-intervention	1.38	1.89	1.20	1.10	0.69 (medium)	.392	-.307 ^b	1.017 ^b
Teacher trust pre-intervention	4.70	.99	5.20	.57	0.60 (medium)	.110	-.381 ^b	.728 ^b
Teacher trust post-intervention	4.99	.74	4.90	.55	0.60 (medium)	-.110	-.728 ^b	.381 ^b
PLC teacher respect pre-intervention	5.43	.39	5.20	.84	0.29 (small)	.032	-.466 ^b	.426 ^b
PLC teacher respect post-intervention	5.40	.47	5.30	.57	0.29 (small)	-.032	-.426 ^b	.466 ^b
PLC openness to innovation pre-intervention	3.24	1.43	4.20	1.30	0.09	-.863	-1.410 ^b	-.305 ^b
PLC openness to innovation post-intervention	3.51	1.31	4.60	.55	0.09	.863	.305 ^b	1.410 ^b
Teacher responsibility for students' learning pre-intervention	4.16	.55	4.13	.50	0.05 (medium)	.052	-.435 ^b	.645 ^b
Teacher responsibility for students' learning post-intervention	4.10	.53	4.04	.50	0.05 (medium)	-.052	-.645 ^b	.435 ^b
Aspiration for teachers' future professional learning pre-intervention	4.41	.67	3.70	1.10	0.03	.574	-.383 ^b	1.711 ^b
Aspiration for teachers' future professional learning post-intervention	4.29	.45	3.60	1.19	0.03	-.574	-1.711 ^b	.383 ^b
Aspiration for teachers' future job retention pre-intervention	4.53	.55	4.20	.84	0.61 (medium)	.650	-.497 ^b	1.839 ^b

Aspiration for teachers' future job retention post-intervention	4.49	.66	3.80	1.30	0.61 (medium)	-.650	-1.839 ^b	.497 ^b
Aspiration for teachers' future leadership pre-intervention	3.83	1.17	3.80	1.30	0.52 (medium)	-.595	-1.493 ^b	.418 ^b
Aspiration for teachers' future leadership post-intervention	3.41	1.13	4.00	1.00	0.52 (medium)	.595	-.418 ^b	1.493 ^b

There was a significant difference on **the Quality Teaching for Quality Learning Environment** variable between control and PLC intervention groups according to p-values shown in Table 6.3, with medium effect sizes (.64) shown in Table 6.4. The interview with teachers in post-PLC intervention revealed that Melinda, Steven and Ruben progressed in their knowledge relating to the social support element in Quality Learning Environment, as pointed out by Steven who said that: "In teaching and learning, a teacher should... not to be angry at them and hit them in the classroom. It is important to create an enjoyable atmosphere for learning...." (Steven, POST2). This was a significant change in Steven's approach to classroom management; he had previously employed corporal punishment in his classrooms. Melinda and Ruben had also said before the PLC intervention that corporal punishment was an option to be used in classroom management. These teachers had begun to change their views about this concerning aspect of their teaching practice. This signals a reduction in the use of corporal punishment in their classrooms and could be further investigated in future research.

Likewise, there was a significant difference between control and PLC intervention groups on **teachers' future professional learning** variable, however, the effect sizes could not be identified because it was smaller than 0.20 according to Cohen's d. This means that there was no significant effect size which could be due to the small number of teachers (n=5) in the treatment group. There was a severe imbalance in the pre-test and post-test design and the bootstrap made it hard to determine the normality of the data. However, this could not be avoided because the nature of the study required long-term commitment from five participant teachers who volunteered for the professional learning intervention. The results of this part of the study should be carefully treated and not be used for generalisation.

It is important also to note that although other combined variables measured did not show significant differences in their p-

value/bootstrapped p-value in Table 6.3., medium effect sizes (Table 6.4) were also calculated for items related to: **PLC collaborative activity (lesson planning, curriculum development, guidance and counselling, evaluation of programs, planning assessment, other collaborative work related to instruction per month); PLC structural conditions (average meeting time to plan with other teachers within the schools); Teacher responsibility for students' learning; Aspiration for teachers' future job retention; and Aspiration for teachers' future leadership.** Large effect size was recorded for **PLC de-privatised practice (for teaching observation and getting observed by another colleagues).** These variables could be noted for future research.

6.5.1.1.1 **PCK-EFL Content knowledge (PCK-CK)**

The sections below report interview findings that help with understanding the impact of a PLC on teachers' PCK a year after the completion of the intervention.

Deep Knowledge (DK)

The participating EFL teachers were asked to explain the connections and relationships between concepts in their lessons. DK (NSWDET, 2003) understanding reflects their content knowledge within the EFL curriculum context. An example of this was Ruben's elaboration of basic competencies 3.3 and 4.3, related to comparing the social functions of different texts, and text structure related to labelling medicine, food, and drink.

For example, the content for the basic competency 3.3 is to compare social function, text structure in terms of special language text in terms of labels, to ask and to give information in relation to medicine labels, food labels and drink labels. So, there are two skills or areas that this particular competency covers. Firstly, the students could compare text structure and social function. Secondly, the students could understand the meaning of the medicine label, food and drink labels. So, the goal of the lesson is to enable students to use those skills, which are, when

they use medicine labels to use the medicine properly in order to gain maximum benefit out of it or when they see a food label they could use the label to see the nutrients in the food. (Ruben, POST2)

Ruben showed his DK in his interview by being able to explain clearly the content of the topic based on the syllabus; his lesson plans reflected this. In his interview, Steven did not provide a detailed explanation of the relationships between the key concepts in his lessons. He was no longer teaching in the classroom because he took on the responsibility of being the acting school principal.

The purpose of DK is to encourage teachers and students to develop and be able to provide deeper explanation about the central ideas of topics in lessons (NSWDET, 2003). Overall, Ruben, Melinda and Petrus were able to explain DK related to the topics they taught and seemed to have developed a better understanding of the EFL curriculum 2013 a year after the PLC intervention (see Appendix 22). This was evident in their interviews and visible in Ruben and Petrus' lesson plans.

Metalanguage (ML)

The participating EFL teachers were asked how they taught the grammar aspect in EFL lessons. Analysis of interview data reveals that the teachers' responses showed that they considered metalanguage in their teaching practice. They stopped to explain new vocabulary and terms and important language structure related to the topic of the lessons to students. This was not a surprise because grammar is considered important in Indonesian EFL teaching and learning and is included in the national examination. For example, Petrus shared:

In this lesson, there is sub topic on modal auxiliary and it relates to future tense. I explain about the usage of 'will' and it could be used to make a promise. It is part of simple future tense. I also explain about 'can' as modal auxiliary. I explain about it to them and provide them with the formula that they could use to make sentences. (Petrus, POST2)

Petrus seemed to be aware of the language structure aspect of his EFL lessons, such as mentioning future tense and auxiliary verbs in his explanation. The teachers showed good content knowledge related to metalanguage. They explained that their content knowledge was informed by the required EFL curriculum that emphasises the teaching of grammar (see Appendix 22). This emphasis on grammar or language structure can be seen in the lesson plans of Ruben and Petrus.

The purpose of ML is to encourage discussion about aspects of language such as text, tenses, and words (NSWDET, 2003); the interview responses of these teachers showed that they focused on grammar and various text genres which was visible in their teaching practice.

6.5.1.1.2 PCK- EFL General pedagogical knowledge (PCK-GenPK)

Knowledge of instructional strategies for teaching EFL topics

Higher Order Thinking (HOT)

HOT in teachers' teaching was an element of interest in this study. This is also recognised in the Indonesian Government Standard for Basic and Advanced Educational Content Policy Number 21 Year 2016 of the Graduate Standards Competency (Kemendikbud, 2016a).

In the post-intervention interviews, these EFL teachers were asked about their understanding of HOT and how they promoted students' HOT in their teaching practice. Ruben explained:

I think that HOT skills mean students are able to produce new material or something that we teach them by using their own ways... I thought that if we start from something simple such as building critical thinking and questioning something, it would probably improve their ability to think and analyse something better... if it is not mistaken there are some levels of thinking, firstly to understand, to remember, to apply, and then to analyse.

So, when we discussed about labels, the activities in the lessons require students to actively engage. For example, the students are given a new label for them to analyse the information within the label, they have to classify which one is the name of the product, which one is the function or usage, which one is the general description from the label... Another example is they are asked to think about the solution to an environmental problem... in their daily lives relating to lots of mosquitos, they probably would use some simple way to overcome the problem such as making a fire and smoke to repel mosquitos. It might not be a modern way and it does not use insect repellent. So, I have to guide them in their thinking. I also provide illustrations if there are many mosquitos in the house, there is possibility the house is not clean and tidy enough. The students are asked to think about healthy lifestyles. (Ruben, POST2)

Ruben's response indicates that he had begun to recognise the importance of HOTS in his lessons and had progressed in his knowledge of HOTS concepts. He considered how to encourage students to develop analysing and problem-solving skills related to mosquito problems. However, he had a misconception about analytical skills. He thought that asking students to identify a product and function was a HOTS activity when it is actually an applying level of HOTS. He could have employed different activities and taught analysing, evaluating and creating skills in the lesson he described rather than asking students to reproduce information from the labels shown in the textbook. The lack of progress in his understanding of HOTS could be due to there not being any continuation of learning about it following the end of the PLC intervention.

Figure 6.3 shows Ruben's lesson plan which outlined the lesson goals of identifying the social functions of label texts (food, drink or medicine labels), identifying the general structure of a label text, identifying language used in a label, in order to write an explanation related to the contents of a label.

Figure 6.3 Ruben's lesson plan for a topic about 'Labels'

B. Kompetensi Dasar dan Indikator Pencapaian Kompetensi

Kompetensi Dasar		Indikator Pencapaian Kompetensi	
3.3	Membandingkan fungsi sosial, struktur teks, dan unsur kebahasaan beberapa teks khusus dalam bentuk label, dengan meminta dan memberi informasi terkait obat/ makanan/ minuman, sesuai dengan konteks penggunaannya	3.3.1	Mengidentifikasi fungsi sosial teks khusus dalam bentuk label, dengan meminta dan memberi informasi terkait obat/ makanan/ minuman
		3.3.2	Mengidentifikasi gambaran umum teks khusus dalam bentuk label, dengan meminta dan memberi informasi terkait obat/ makanan/ minuman
		3.3.3	Mengidentifikasi unsur kebahasaan teks khusus dalam bentuk label, dengan meminta dan memberi informasi terkait obat/ makanan/ minuman
4.3	Menangkap makna secara kontekstual terkait dengan fungsi sosial, struktur teks, dan unsur kebahasaan teks khusus dalam bentuk label pendek dan sederhana, terkait obat/ makanan/ minuman	4.3.1	Menulis teks yang menjelaskan isi label untuk memberikan informasi terkait obat/ makanan/ minuman
		4.3.2	Menulis teks yang menjelaskan isi label untuk memberikan informasi terkait obat/ makanan/ minuman

			15
		Breadmenjelaskan fokus dari pengamatan label makanan	
3	Memperhatikan penjelasan guru	Menjelaskan bagian apa saja yang perlu diperhatikan dalam mencari informasi dalam label packaging	
Menanya/ Questioning			10 menit
4.	Memilih satu label packaging	Meminta setiap kelompok untuk memilih satu label packaging	
5.	Menemukan makna kata sulit yang ada dalam packaging yang dipilih untuk memahami isinya	Membimbing siswa untuk menemukan makna kata sulit yang ada dalam packaging yang dipilih untuk memahami isinya	
Mencoba/ Experimenting			10 menit
6.	Menganalisa informasi dalam label produk yang telah dipilih dengan bantuan tabel	Menugaskan siswa untuk menganalisa informasi dalam label produk yang telah dipilih dengan bantuan tabel	
Menalar/ Associating			7 menit
7.	Menyusun penyajian informasi dalam label produk secara oral	Menugaskan siswa menyusun penyajian informasi dalam label produk secara oral	
Mengkomunikasikan/ Networking			25 menit
8.	Menyajikan informasi packaging secara oral di depan kelas	Meminta setiap perwakilan kelompok menyajikan informasi packaging secara oral di depan kelas	

Ruben's lesson plan provided learning activities that did not encourage students to conduct analysis of information found on labels. Lesson goals 3.3. and 4.3 were to compare and identify various food labels, medicine labels and other product labels; the textbook-inspired activity provided opportunities that only allowed students to develop their LOT skills in comparison to the lesson plans made during the intervention. Figure 6.4

shows activities in the prescribed textbook based on the revision 2013 curriculum that were used by Ruben in his lesson.

Figure 6.4 Learning activities from Chapter 4 related to topics on Labels
(Kemendikbud, 2015b, pp. 69-72)

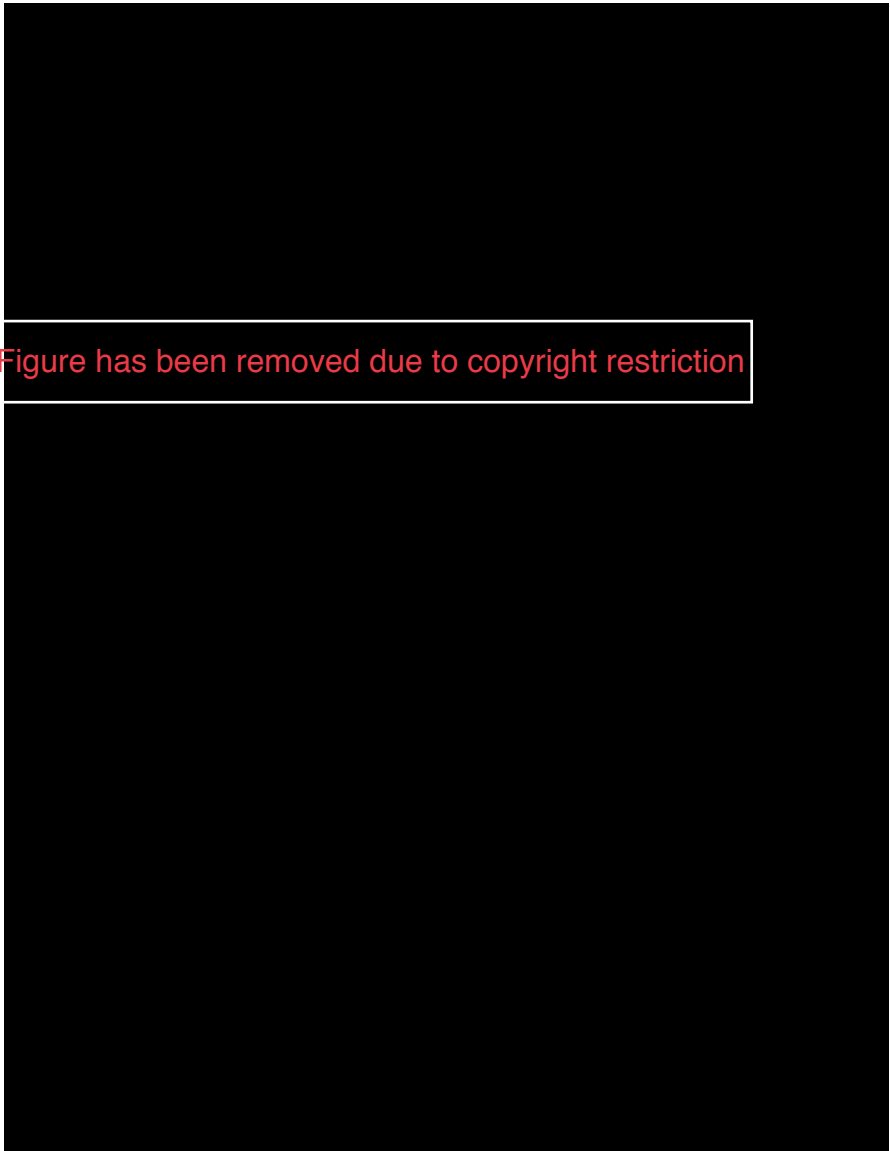


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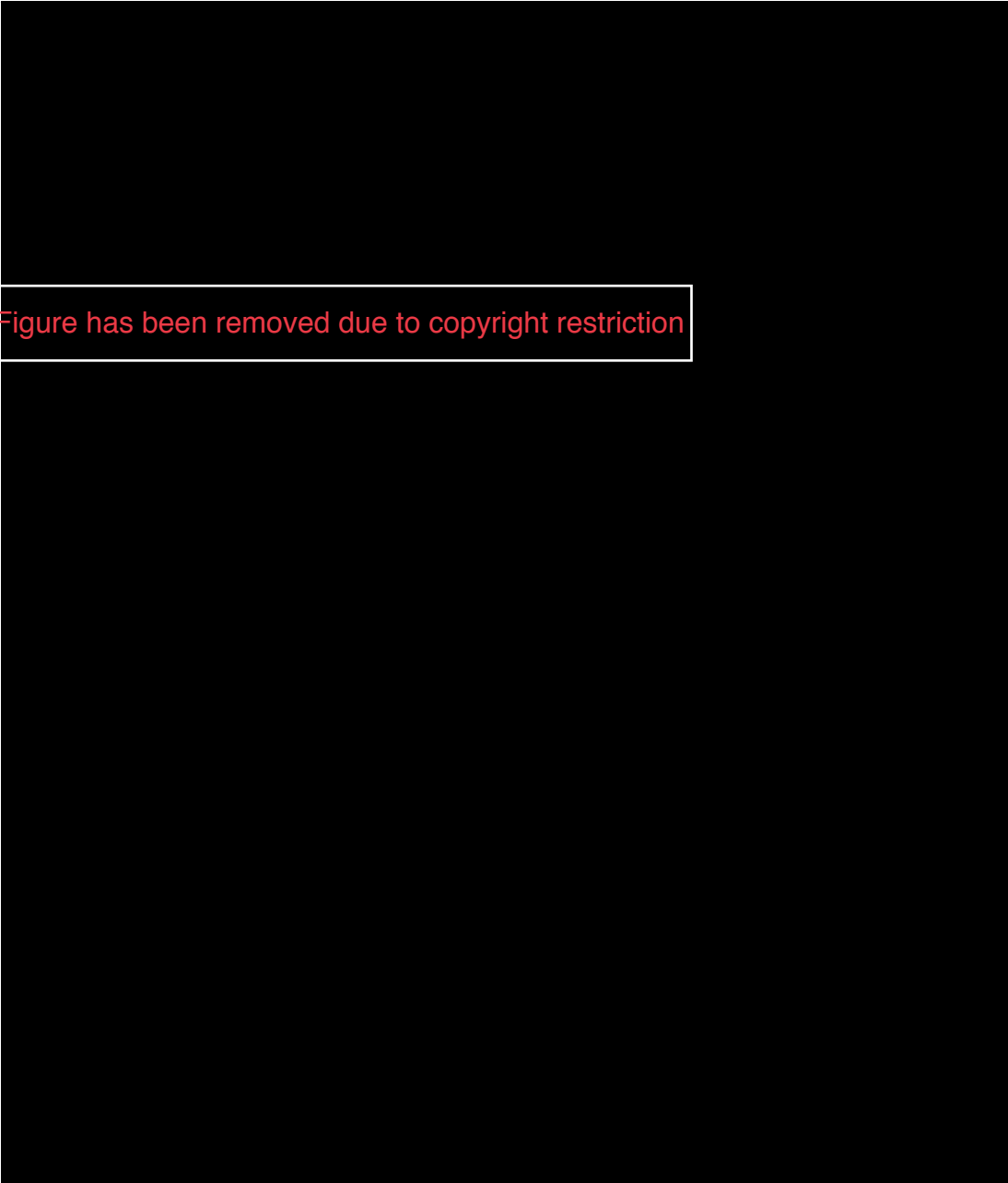


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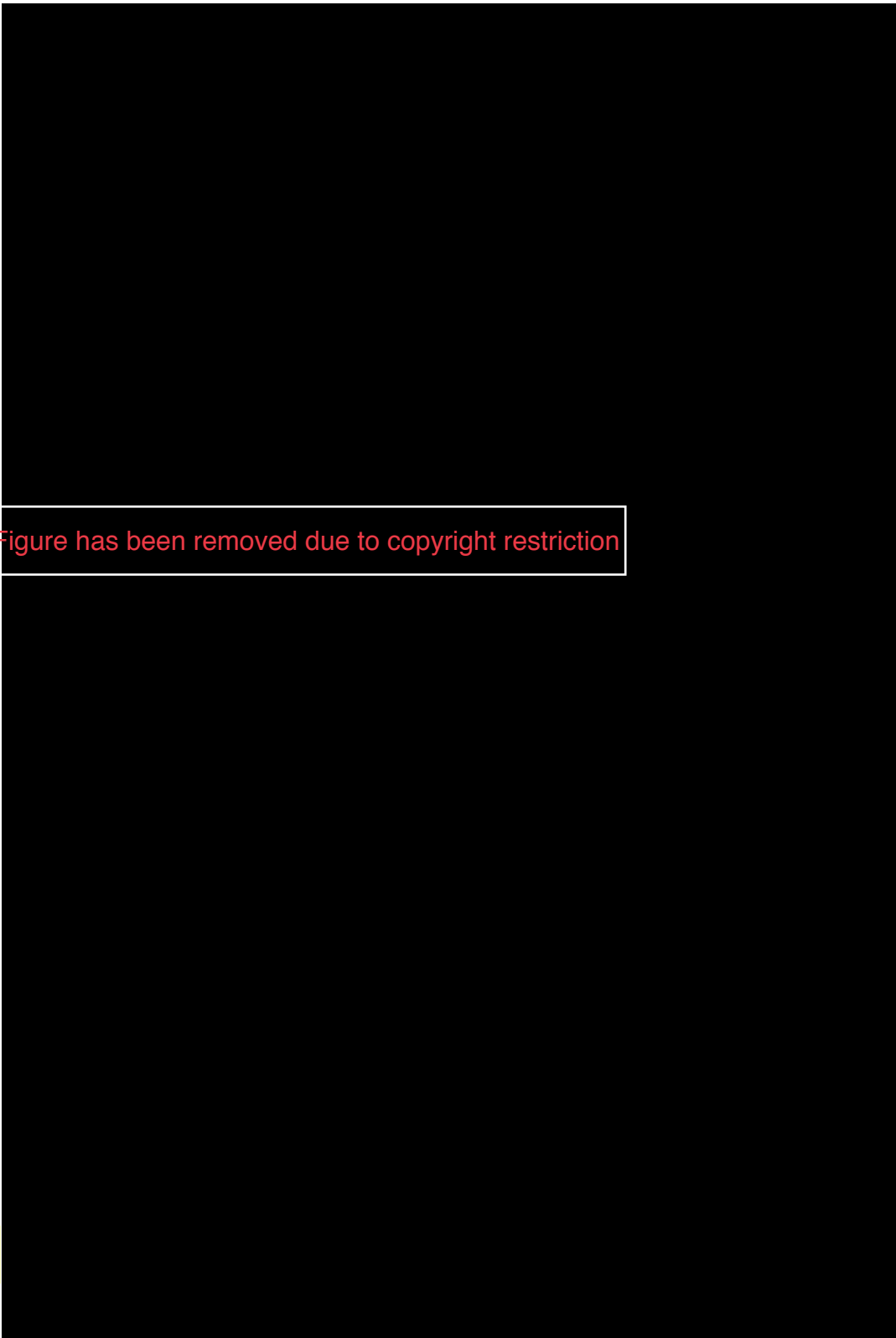


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As can be seen, the activities from the 2013 curriculum (Figure 6.4) encouraged students to identify tea and olive oil labels, however, there were no activities related to evaluating or creating labels relevant to students. It is worth noting that the students would not have seen olive oil on their island.

Melinda, who taught grade seven, mentioned that HOT referred to “the students’ and teacher’s ability to remember and memorise something as well as being able to evaluate information and create something new using their knowledge of the topic” (Melinda, POST2). These comments show that she was developing her understanding of HOT concepts following her participation in the PLC intervention. Her interview revealed that her classroom practice was still limited to LOT where she followed prescribed textbook activities. This showed that even though her knowledge of HOT concepts was developing, she still needed support to implement HOT in her classroom, as reported in Study 2.

For instance, in her lesson on 'greetings', the students were given opportunities to remember, understand and apply greetings (LOT) in their conversations and Melinda commented:

For example, in a lesson from chapter one 'greetings', I ask them to do the task from the book. There is a task that includes a column on number, who, what time and what did you say. The task requires them to list what they would say in a particular time. I have explained it to them as a teacher before they do the task. They understand it, they start to write directly. I give them freedom to write whoever they meet there, for example, they meet me, or their friends, or the principal of the school. I instruct them to look for the English word for school principal in the dictionary and what time they meet the principal. (Melinda, POST2)

Figure 6.5 shows the textbook activity from the Revised 2013 Curriculum used by Melinda in her lesson.

Figure 6.5 Learning activities from Chapter 1 on 'Greetings' (Kemendikbud, 2014a, p. 1 & p. 13)

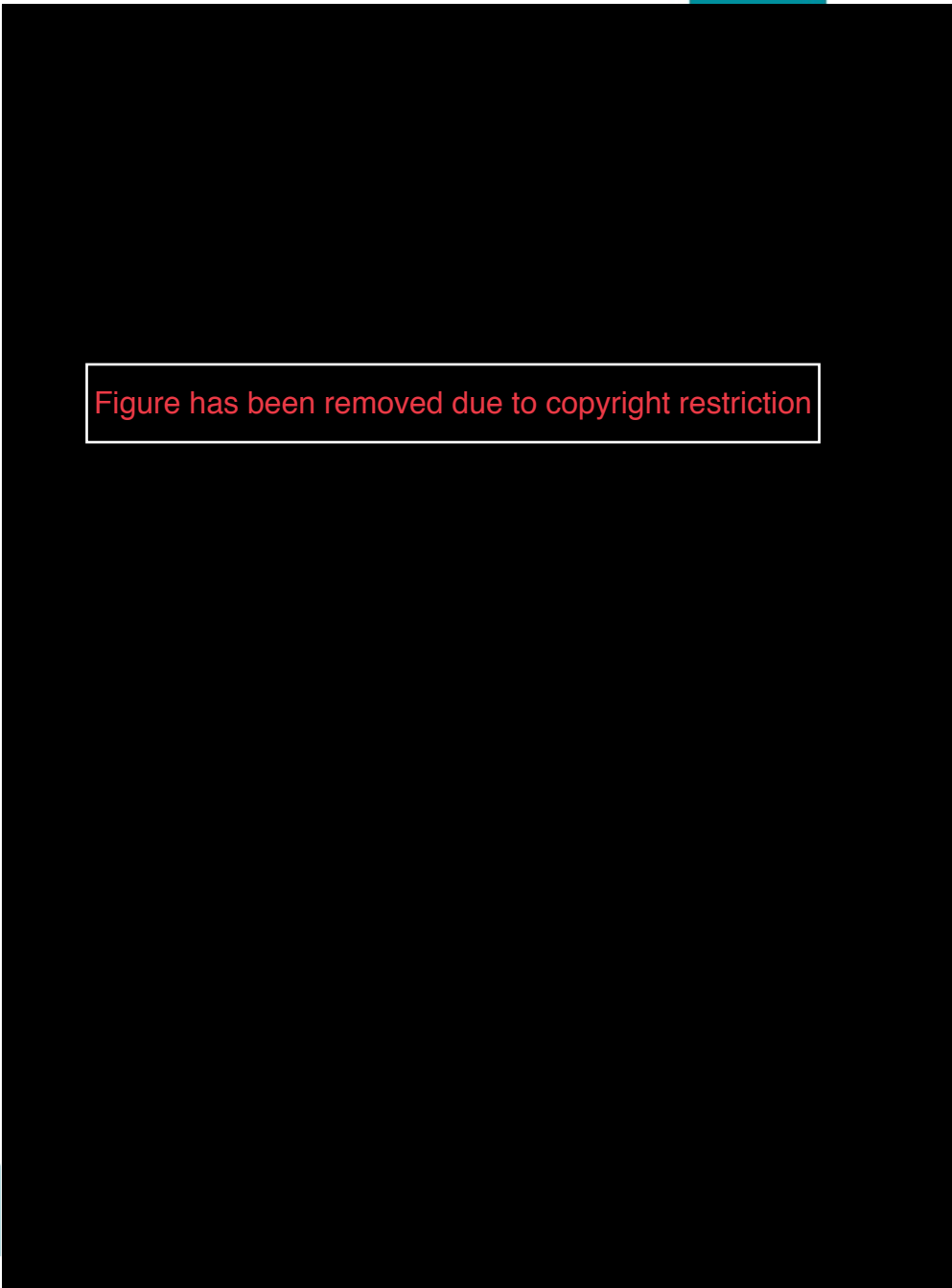


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Melinda's comments indicate that she mistook LOT activities to be HOT activities. This showed that her superficial understanding of HOT concepts could mean that she missed opportunities to teach HOT. Students could have gained the same understanding by creating a poster of their family as part of the topic on introducing oneself and others, or interviewing other students and creating profiles.

Petrus taught grade eight and reported using the new curriculum 2013 and including HOT, critical and creative thinking into his lesson plans. He explained how he did this:

I provide them with the opportunity to solve problem themselves and remember the content of the conversation, what is the conversation about, what the people do in the conversation, and to identify the conversation. I also ask the students to memorise it and then 15 minutes later they could perform or practise the conversation in pairs in front of the classroom. I also ask them to present in groups about what they could do and what their friend could do I ask the students to write about it in groups, and then I ask them to conduct an interview with their friends in their groups based on the question list that I have given them. (Petrus, POST2)

Petrus' explanation reflected LOT learning activities (remembering, understanding and applying) which showed his superficial knowledge of HOT concepts. After checking the EFL textbook for grade eight, and comparing it with his lesson plans, it was clear that although critical and creative thinking was mentioned, there was no detailed elaboration of how he implemented teaching about HOT in his lessons.

Figure 6.6 shows Petrus' lesson goals from his lesson plan on 'invitations and greeting cards', where he listed learning objectives such as being able to apply language structure for invitations and greeting cards, understanding the meaning of invitations and greeting cards, and being able to write personal invitations and greeting cards based on a required structure.

Figure 6.6 Petrus' lesson plan goals for the topic of invitations and greeting cards

B. KOMPETENSI DASAR

- 1.1 Mensyukuri kesempatan dapat mempelajari bahasa Inggris sebagai bahasa pengantar komunikasi Internasional yang diwujudkan dalam semangat belajar
- 2.1 Menunjukkan perilaku santun dan peduli dalam melaksanakan komunikasi interpersonal dengan guru dan teman
- 3.4 Menerapkan struktur teks dan unsur kebahasaan untuk melaksanakan fungsi sosial dari teks undangan pribadi dan ucapan selamat (*greeting card*), sesuai dengan konteks penggunaannya
- 4.4 Menangkap makna undangan pribadi dan ucapan selamat (*greeting card*), sangat pendek dan sederhana
- 4.5 Menyusun teks tulis undangan pribadi dan ucapan selamat (*greeting card*), sangat pendek dan sederhana, dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan yang benar dan sesuai konteks

C. TUJUAN PEMBELAJARAN :

Melalui pendekatan saintifik dan metode diskusi peserta didik dapat:

1. Menerapkan struktur teks dan unsur kebahasaan untuk melaksanakan fungsi sosial dari teks undangan pribadi dan ucapan selamat (*greeting card*), sesuai dengan konteks penggunaannya
2. Menangkap makna undangan pribadi dan ucapan selamat (*greeting card*), sangat pendek dan sederhana
3. Menyusun teks tulis undangan pribadi dan ucapan selamat (*greeting card*), sangat pendek dan sederhana, dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan yang benar dan sesuai konteks

Petrus' lesson plan would encourage students to analyse and produce their own invitations and greeting cards. A check of the activities in the EFL textbook revealed that there were activities that enabled students to analyse, evaluate greeting cards and produce their own. Figure 6.7 shows the activities from the EFL textbook related to the lesson on invitations.

**Figure 6.7 Learning activities from Chapter 4 for a lesson on invitations
(Kemendikbud, 2014b, pp. 57-65)**

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When asked about this, Petrus reported that he was not able to teach students to produce invitation cards because they did not have supporting resources such as paper, glue, and colourful pens. Instead he chose activities related to remembering, understanding and applying (LOT) with a small amount of activity related to analysis; it seems that he had superficial knowledge of HOT concepts. Although these EFL teachers had reported that the new 2013 curriculum encouraged them to teach HOT, it can be seen that the EFL textbook did not provide enough HOT activities to support them to do this. Like the other teachers, Petrus did not continue to teach about HOT in his lessons once the intervention had finished.

All of the teachers said they recognised HOT to be important for students, but they did not include HOT activities in their lesson plans (see Appendix 22). They all struggled to include HOT skills in the topics they taught in the year following the PLC. They had just begun to develop their understanding of HOT during the PLC intervention and still relied heavily on textbook activities in their teaching. Without support in a PLC they struggled to translate their new understanding of HOT into their daily practice; they went back to their traditional teaching practices which had more focus on LOT. They did not have the supporting resources provided in the PLC to give students opportunities to do hands-on activities or encourage development of HOT. Overall, the HOT element in the QTF is meant to encourage students to think critically, solve problems and create new ideas, concepts, or products (NSWDET, 2003). However, a year after the PLC intervention concluded, the teachers' comments indicate that they struggled to incorporate HOT into their lessons.

Student Direction (SD)

EFL teachers were asked whether they gave students freedom to choose their assignments in lessons a year after the PLC intervention ended. Steven commented: "there is freedom for the students to choose the topic by themselves, for example, I ask them to write about National

Education Day, So, I give them freedom to choose their title, but the topic is on education day” (Steven, POST2). In addition, Melinda also shared: “No, they don’t have freedom to choose the type of task, but they have obligation to do it only” (Melinda, POST2). These comments (see Appendix 22) indicate that each of the teachers gave students very limited options within their assignments; mostly students could choose from prescribed tasks that had been prepared by the teacher. Similarly, teachers did not provide students with freedom to choose activities or tasks in their learning; they were not explicitly developing student direction in their lessons. The purpose of SD is to encourage a student-centred classroom that allows students to take charge and have responsibility for their own learning (NSWDET, 2003). With very little emphasis being given by the teachers to developing student direction, it is clear that it was hard, they need to learn more about how to encourage student direction in their classrooms.

Connectedness (CN)

EFL teachers were asked how they connected lessons to students’ real lives. Petrus talked about how he made connections between a lesson and its relevance to students: “I explain to them that they could use greeting cards when they have friends’ birthdays. They could congratulate their friends... who have a special day and the parents give presents to them” (Petrus, POST2). Petrus said that he missed the opportunity to engage students in applying their knowledge by making greeting cards themselves and giving the cards to someone outside the classroom.

Melinda’s interview response could show why teachers did not plan creative activities following the completion of the PLC: “I did not get any support such as equipment and resources to create activities with and for my students” (Melinda, POST2). Lack of material support could have discouraged her from planning creative activities; she would have needed to spend her own money to buy teaching and learning resources. It is important to understand that all of the students in both schools came

from low socio-economic backgrounds and it would have been difficult for teachers to burden students with buying resources to be used at school. For this reason, they would need to pay for resources themselves; this would have been difficult because the teachers were on low salaries. Teachers' comments showed that they tried to make some connections between their lessons and students' lives outside the classroom (see Appendix 22). They wanted to encourage students to share their knowledge with others in the community but to do this they would need continued professional learning and material support to plan and implement lesson activities that students would see as relevant and interesting.

Knowledge of classroom management and organisation

Engagement (EG)

A year after the PLC intervention, the EFL teachers were asked how they engaged their students in learning tasks in their lessons. Interestingly, all teachers said they considered group work encouraged students' engagement in lesson activities but recognised that students needed to be guided on how they could work efficiently and effectively in groups. Petrus explained: "I engage my students to do the task in the lesson through group work. The students usually do the task by asking each other in different groups" (Petrus, POST2). Petrus' comment shows that he employed the same strategy he had learned in the PLC intervention. Similarly, other teachers continued to employ group work as a strategy to engage their students in learning activities.

All of the teachers said they tried to employ group work to some extent in their lessons (see Appendix 22). Steven and Melinda described using cooperative learning, while Ruben and Petrus struggled to implement it because they were not able to ensure active participation of all group members. In the PLC they had learned how to employ the role distribution

strategy to engage all students in different tasks during group work but seemed to have forgotten it during the year since the PLC ended.

Social Support (SS)

The purpose of SS is not only about managing students' behaviours but also about encouraging and appreciating students' effort and participation in lessons (NSWDET, 2003). To gauge the social support these EFL teachers were promoting a year after their PLC collaboration, they were asked how they provided a safe and mutually respectful environment for students' learning in the classroom. Steven commented:

In teaching and learning, a teacher should be able to create situations in the classroom that encourage students to enjoy the lesson, ... not to be angry at them and hit them in the classroom. It is important to create an enjoyable atmosphere for learning and to have a fun learning environment. (Steven, POST2)

Steven considered it important for teachers to provide a classroom context that gave space for students to enjoy their learning and pointed out that he believed it was important that teachers did not use corporal punishment in the classroom. This showed a shift in his beliefs related to classroom behaviour management compared to his beliefs and observed practice before the intervention. This indicated that the PLC had helped him to evaluate his approach to classroom management. However, Petrus showed that he went back to his old practice of using student shaming and corporal punishment to discipline students (see Appendix 22).

Ruben, Steven and Melinda had progressed in their knowledge related to providing a positive and supportive learning environment for their students. Their comments indicated that they understood the importance of having a safe space for students' learning, showing that they were developing their PCK related to providing supportive learning environments in their classrooms. It seems that their PLC discussion and reflection in Study 2 had contributed positively to changing their perspectives about using corporal punishment as a way of managing

students' behaviour. This was an important first step towards creating a safe learning environment for their students and would assist them to understand positive classroom management and develop strategies to promote a safe, harmonious classroom environment.

Students' Self-Regulation of behaviour (SSR)

The purpose of the SSR element is to help students not only regulate their own behaviours but to demonstrate autonomy or initiative for their learning behaviours (NSWDET, 2003). A year after the conclusion of the PLC intervention, the teachers were asked about how they encouraged SSR in their classrooms. Petrus talked about how he regulated students' behaviour:

To discipline the students in order to focus on the learning, I walk around the groups and check on their work, if they are really working on the task or not. If I find that they are not doing what they are asked, I would threaten them that I would pinch their ears or call them to the front to be guided. Also, I remind them not to disturb their friends who work on the task. (Petrus, POST2)

Petrus mostly employed a punishment and reward system to regulate students' behaviour in the classroom. His comments indicate that he still needed professional learning that would help him develop ways to help students regulate their own behaviour instead of him regulating it by using physical violence. Although he mentioned that he discouraged students from bullying their friends in the classroom and encouraged them to treat other students equally, he used physical means to regulate or punish misbehaviour.

The teachers in both schools had varied PCK related to regulation of their own behaviour. While Steven employed a routine for group work, Petrus still employed corporal punishment, Melinda used a sanctions approach, and Ruben regulated students' behaviour by using classroom rules in his lessons (see Appendix 22). The continued use of corporal punishment by Petrus indicated a hidden culture in the schools that allowed teachers to practise this method of controlling students' behaviour without negative

consequences for their careers. Although, Steven, Melinda and Ruben did not report using corporal punishment a year after the PLC, their comments show that their focus was still on disciplining students rather than helping them develop self-control. Continued professional support would be needed to develop their PCK for promoting SSR of behaviour in their EFL classrooms.

Inclusivity (IN)

The purpose of IN is to encourage full participation of all students in learning activities despite their backgrounds and levels of academic ability (NSWDET, 2003). A year after the intervention, the teachers were asked how they included all students in EFL learning in their classrooms.

Melinda suggested a similar viewpoint in her comment: "the teacher could arrange the seating of the less active students with those who are active learners" (Melinda, POST2). She believed this seating arrangement would encourage students' participation in learning tasks and added that she was careful that she did not encourage mocking and bullying behaviours related to students' academic ability in her lessons.

Petrus explained that he provided freedom for students to ask questions and said he encouraged them to be involved in their learning, although he sent mixed messages because he talked about pinching the ears of students who asked questions, were stupid, or were lazy.

To include students who come from different background means everyone have freedom to ask questions. I always tell them that I don't hit stupid students, but those who feel they lack knowledge would be better to ask questions. If you think that you are smart, then you could help your friends who are not so smart. I would only pinch those who are lazy. So, I tell them don't be afraid to ask questions. (Petrus, POST2)

His suggestion that using corporal punishment encourages students to be involved in the learning process, indicates that his idea of inclusion was more related to how he maintained students' involvement in learning than to making learning appropriate for students' abilities. He was a novice

teacher with little experience (one year) and it seems that without support to develop his PCK related to positive classroom management following the PLC intervention, he was not implementing the new knowledge he gained from it.

These comments show that the teachers had developed a superficial understanding of their PCK related to the inclusion of all students in classroom learning (see Appendix 22). Their idea of inclusion was limited to maintaining order and students' involvement in learning activities (i.e., arranging group seating or mixing students with various academic ability in a group or more able students helping those who were less able). Their comments did not show any recognition of high ability students having a right to learn more complex content or at a high level (i.e., critical thinking, creative thinking and problem solving). They did not comment on designing appropriate tasks based on students' academic ability to cater for those with low or high EFL proficiency.

Classroom communication and discourse

Substantive Communication

The purpose of SC is to encourage sustained communication about the content of classroom lessons (NSWDET, 2003). When the EFL teachers were asked how they encouraged their students to have meaningful discussions and dialogue in lessons, Ruben explained:

So, for the lesson on labels actually I have prepared the final assignment for students to work in groups to find food or drink labels. After that, they have to analyse the information in those labels and then present their findings in front of the classroom. They could share about the ingredients or contents, the name of the product and other things. (Ruben, POST2)

Ruben described providing students with opportunities to analyse labels in groups and present their work to other students in the classroom, which is SC. Steven also shared: "I encourage them through group discussions.

One group consists of maximum five students; it depends on the level of difficulty of the topic" (Steven, POST2).

All of the teachers talked about having students work with peers in groups because this approach provided opportunities for students to practise their English language and help each other (see Appendix 22). It can be seen that their comments about employing group work to allow discussion were focused more on the arrangement of groups rather than on learning activities provided for students in the groups. There were no comments about how they encouraged their students to have sustained discussion about lesson topics although there was mention of presenting their group work to the class after discussion.

High Expectations

HE is related to teachers encouraging students to take risks in their learning and challenging them to develop their knowledge and skills (NSWDET, 2003). The EFL teachers were asked how they communicated their high expectations of students and how they rewarded students' participation. In answer to this question, Ruben commented:

I encourage them to participate by telling them the consequence if they don't participate in terms of their scores. For example, they might get low scores if they don't do their task properly or I tell them that they won't gain new knowledge that they need. The students also have a habit of asking friends from different classes that I teach about the assignment. After they find out that their friends have done the assignment, they ask for it and copy the answers such as for completing conversations. (Ruben, POST2)

Ruben's comments showed that he threatened students with the consequence of getting low scores in their final results for the subject if they did not participate in learning. He also had the problem of students doing anything to achieve high scores for their assignments, as shown by mention of them copying their friends' work from different classes. Ruben had high expectations but they were connected with coercion instead of

positive encouragement for students to achieve improved learning outcomes.

Melinda said:

I explain to them if you want to get that [high] score, it means you must do the task. It is not only for the task, but for your future too. So, if you do your task in the lesson with a purpose not only to get a high score but to gain benefits from each lesson. Every material in the lesson is given with its goals first, so the students are expected to achieve those goals at least and it is useful for their future. I give them a reward by telling them for example, "if you could get the score of 100, it means excellent!" (Melinda, POST2)

Melinda was communicating her high expectations for students to get high scores in EFL lessons and described encouraging them with praise. Like the other teachers, she shared with students the benefits of learning a topic in relation to their future. However, she did not elaborate the details of work quality that she expected from students. The teachers interpreted high expectations to mean getting high scores in their learning (see Appendix 22).

Narrative

Narratives are meant to help students understand the content of a lesson through using stories (NSWDET, 2003). In their post-intervention interview the teachers were asked how they explained their lesson topics to students in their EFL classrooms. Ruben said he used brainstorming:

To explain the lessons on topic about labels, I have explained before in the text book curriculum 2013, it provides an outline of how to start a lesson... then I ask my students some questions: "who have ever consumed any of these products? do you think you always consume those products well or not? (such as soda drinks or instant noodles), who among you consumes the products in daily life?" After that, we discuss the goals of the lesson in order to achieve the goals, which are to better understand the information from the labels and gain the best benefits from the products. (Ruben, POST2)

It can be seen that Ruben used students' experiences with the lesson topics to develop their understanding. He did not use any narrative or stories to teach students about the topics although he used conversations in his teaching that were dictated by the textbook (as shown in his lesson plans). This indicates that he used a traditional teacher-centred approach to teaching where he did most of the talking. The teachers' comments showed that they did not continue to employ relevant narratives to help students understand the topics of their lessons after the PLC intervention finished (see Appendix 22).

Knowledge of student assessment in EFL topics

Explicit Quality Criteria

The purpose of EQC is to help students understand the specific requirements of learning tasks so they are able to check the quality of their work (NSWDET, 2003). The EFL teachers were asked questions in relation to whether they shared task criteria with students in order to help them understand what they needed to learn in their lessons. Ruben described how he used criteria in his teaching by saying: "So, I only share the spoken criteria to students, and I don't really prepare specific criteria. So, when the students do role play, I only give them a brief picture of what they need to do" (Ruben, POST2). Ruben described giving students brief explanations and instructions related to a task and did not provide any detailed criteria that students could use to check their work. In his lesson plan he listed some criteria for his own reference. Similarly, Petrus also said he did not use task criteria after the PLC intervention was completed. From teachers' responses it can be seen that some valued the benefit of providing students with task criteria following the PLC intervention while others did not (see Appendix 22). Further professional learning to help them develop their knowledge of EQC would be needed if they were to implement it effectively.

6.5.1.1.3 **PCK-EFL curriculum knowledge (PCK-CurrK)**

Knowledge Integration

KI aims to ensure that teachers present meaningful connections between topics across the curriculum (NSWDET, 2003). The EFL teachers were asked how they made these sorts of connections between subjects and key concepts in their EFL lessons. Each teacher said they followed prescribed curriculum topics in their teaching and employed the textbook to guide student learning in their EFL classrooms (see Appendix 22).

Okay, for the curriculum 2013, all of the contents in this curriculum are integrated with daily lives. For example, we could discuss the picture provided in the text book and the theme that related to the students' daily lives in the society. (Ruben, POST2)

.... the topic is about self-identity... the students need to present some data on their self-identity such as name, origin, and home address... There are some sub-topics on introducing their friends, and so it has relation to each other. (Melinda, POST2)

Responses from Petrus, Ruben and Melinda indicate that they understood the lesson topics in the curriculum and made some connections with their teaching of topics and subtopics. A year after the PLC intervention they had become familiar with the new syllabus of 2013 which revised the EFL curriculum, and this is likely to have assisted them in topic integration.

6.5.1.1.4 **PCK- Knowledge of EFL learners and their characteristics (PCK-KLLC)**

Knowledge of students' understanding of EFL topics

Problematic Knowledge

PK is supposed to encourage students to present and evaluate different perspectives related to the topic of their lessons (NSWDET, 2003). The

participating EFL teachers were asked how they provided opportunities for students to ask questions to clarify their understanding. Ruben described how he gained an idea of students' prior knowledge about a topic:

... I would find out what their experience is with labels and how they use the information from the labels. For example, when they get medicines from the hospital, the labels in the medication is given, they have to take the medicines 3x1, some understand what it means, but some might not understand the instruction on how to take it. (Ruben, POST2)

In his interview Ruben went on to describe knowing about students' misconceptions because he had chatted with them. This approach led to him clarifying students' misconceptions and helping them build their understanding of the topic. He had progressed in his PCK related to understanding students' misconceptions since he first engaged in the PLC.

Petrus said he used small groups to encourage students to share their perspectives with each other and asked students to raise their hands to share their ideas in his classroom community. Culturally, this is not common practice for young members of groups in this rural island tribe, so it is not surprising that students did not raise their hands to share their ideas. They may have felt embarrassed and considered it impolite to speak up to an adult with authority, raising the issue of whether the teacher lacked knowledge of the students' culture or did not integrate it into his lesson.

Overall, the EFL teachers had progressed in their PCK related to PK and helping students to engage in discussion related to their misconceptions, misunderstandings of concepts, or holding different perspectives on learning topics (see Appendix 22). Three out of four teachers employed approaches such as seeking clarification and using small group discussions, while one went back to using his old practice of asking students to raise their hands to answer teacher-posed questions in whole class discussions.

Background Knowledge

BK is meant to help students understand the relevance of lessons to their lives (NSWDET, 2003). The EFL teachers were asked how they connected their lessons to students' prior knowledge or life experience. Ruben mentioned that he related his teaching of topics to students' everyday life experiences, and said that he referred to the Curriculum 2013 text book to guide the way he could make connections to students' life experiences.

... Another example, in the topic on labels for medicines and food, we tell them that they could use their knowledge about labels to help their family to understand those labels in their daily lives because they live among their family or relatives who have low education background or limited education background. (Ruben, POST2)

Examination of the text book revealed that the same approach to learning about topics is provided for all areas in Indonesia even though some students from rural areas might not have the resources or experiences mentioned in the text book. This was the case for the example referred to by Ruben where students did not have any of the things that were mentioned in the textbook. In this case, relying on the textbook would be unlikely to help students make connections between what they are learning and their background knowledge.

The teachers' comments show that they relied on activities from the national textbook provided by the Indonesian Government in their teaching and hoped students would be able to make connection (see Appendix 22). Three of the four teachers' responses showed that they related their teaching to students' daily lives to varying extents. Connecting new knowledge in a meaningful way to students' experiences is an important first step to stimulating their thinking.

Deep Understanding

DU was meant to encourage students' understanding of the content presented in lessons by exploring and critically evaluating the relationship of concepts to use the knowledge to draw conclusions and solve problems

(NSWDET, 2003). The EFL teachers were asked how their students demonstrated their deep understanding of lessons. Ruben talked about developing deep understanding in the following excerpt:

So, the process is I use the curriculum 2013 text book, it contains examples of medicine labels, food and drink labels. I show the students the labels and then we analyse it together. So, in a label, it should have seven key points. After we analyse the examples of labels together, I actually give them new labels and ask them to analyse the new labels, if the labels have the seven key points (Ruben, POST2).

Ruben explained that he encouraged the development of student understanding by requiring them to think deeply by analysing labels. Likewise, Melinda said: "so, after the students learn from what the teacher has shared about self-identity and greetings, they could apply it through practising it with their fellow students" (Melinda, POST2). She said that she would know if her students understood the topic by the way they applied the information as they worked with their peers. Overall, the teachers described employing different ways of identifying students' understanding of the key concepts of EFL lessons. However, the teachers' explanation of students' understanding was about carrying out a task instead of students' deep understanding related to HOT where they would be analysing, evaluating and creating (see Appendix 22).

6.5.1.1.5 PCK – Knowledge of EFL educational contexts and cultures (PCK-KECC)

Cultural Knowledge

CuK is meant to encourage considerations of diverse cultural knowledge in lessons (NSWDET, 2003). The EFL teachers were asked to explain how they integrated cultural aspects of students' lives into their lessons.

Ruben talked in the following way about how he made connections between topics he was teaching and students' cultural backgrounds:

For example, the topic on the purpose of stating something in relation to health theme. In the text, there is a conversation among several students about diarrhea. The conversation reveals the sickness, the medicine and the reason for the sickness. Then I would connect it to the students' lives in this regency, in relation to the lifestyle of poor personal hygiene in the area. (Ruben, POST2)

Ruben included his knowledge of students' cultural background in his lesson by using some examples that came from students' daily lives. He realised that the cultural aspect of preventing disease spread from toilets needed to be an important part of his teaching in order to make the lesson relevant to the students in this rural regency. Overall, all four of the teachers exhibited progress in their PCK in relation to integrating cultural aspects into their lessons and drawing on students' real-life experiences (see Appendix 22). Professional learning would be valuable for maintaining and extending the progress into their lessons that they had made during PLC.

6.5.1.2 The sustainability of gains from the PLC on EFL teachers' beliefs, attitudes, professionalism and agency

This section addresses research question RQ 1 about the sustainability of any gains from the PLC intervention designed to strengthen EFL teachers' PCK. The findings related to EFL teachers' beliefs, attitudes, professionalism and agency showed that they had shifted in their beliefs a year after their initial participation in the PLC intervention. The discussion draws on interview data to report the findings related to changes in teachers' attitudes and beliefs.

6.5.1.2.1 EFL teachers' beliefs about students' learning abilities

Interview data showed that a year after the PLC intervention these teachers had some changes in their beliefs related to teaching HOT in EFL lessons. They acknowledged the importance of HOT in their lessons, as shown by Ruben's response:

So, during the intervention, I actually thought that HOT is something that is too much for my students. However, I thought that if we start from something simple such as building critical thinking and questioning something, it would probably improve their ability to think and analyse something better... If it is not mistaken there are some levels of thinking, firstly to understand, to remember, to apply, and then to analyse (Ruben, POST2).

Each of the teachers said they understood now that HOT needed to be included in their lessons and said they realised that students were capable of learning HOT. There were circumstances that hindered them from integrating HOT in their lessons, and these barriers will be explained in detail in section 6.5.2 of this chapter.

6.5.1.2.2 **EFL teachers' beliefs about their self-efficacy**

This section outlines the positive impact of the PLC intervention on improving EFL teachers' self-efficacy.

EFL teachers' satisfaction with the teaching and learning process

Interview data showed that the four teachers felt satisfied with their teaching and learning after they participated in the PLC intervention. Melinda suggested that the PLC helped her to provide better teaching and learning experiences for her EFL students:

The changes that I have experienced as a teacher after the intervention is I feel more motivated to do something better than my previous year teaching. A bit of positive impact from what we have done before... So, I do not use all of QTF elements, but I still use the explicit criteria quality and give it to the students. So, the students do not play around, even though, I don't come to the classroom. They still have assignments to do and criteria to follow. I feel happier to teach because I have understood the steps on what to do as a teacher in the classroom... Therefore, the students could produce good results from their learning. Personally, I still consult or use it (QTF) to some extent, a little bit. Because it is good. It still has positive impact on my students' learning. (Melinda, POST2)

Melinda revealed that she felt happier about teaching her students after the PLC intervention because she had increased her self-efficacy beliefs

related to teaching her students. Before the PLC intervention she said she had felt discouraged about teaching and had low motivation for teaching. After her involvement in the PLC, she discovered renewed confidence in her teaching. Rather than asking students to copy and write down topics from the textbook, she planned 'good tasks' and supervised students' learning progress in lessons.

Steven also reported satisfaction with the quality of his teaching:

For example, preparing the teaching aid and other related things for the topic that will be taught takes lots of time, but the result is the students could see the lesson and could respond to the questions related to the topic of the lesson. (Steven, POST2)

Steven stated that the QTF had a positive impact on his teaching and on student learning. Overall, the teachers indicated that the PLC had contributed to their knowledge of teaching and learning and had enhanced their self-efficacy and satisfaction with their classroom teaching.

EFL teachers' confidence for teaching

All teachers revealed that they felt more confident to teach their students after being involved in the PLC. Melinda reported that the PLC intervention contributed to her feeling of increased confidence as she underwent an official classroom supervision conducted by the Education Department:

Also, I just have my recent supervisor, before the intervention I always felt unsure when there is a supervisor coming. I feel afraid and seem to be nervous when there is a supervisor in my classroom, but after participating in the intervention and experience of you recording my teaching in the classroom, I actually feel more confident. So, I become more confident and happier after the intervention. I get to know my own weaknesses, and so I could improve them by revising that part. I have a willingness to improve my teaching after the intervention by a mentor. (Melinda, POST2)

Melinda's comment shows that she valued the PLC because it increased her confidence in her EFL teaching because she had the experience in the PLC of another person observing and recording her teaching. Similarly, Steven became the school principal and confirmed a change in his confidence which he attributed to working in the PLC with other teachers from different curriculum areas.

QTF is a helpful tool for teachers to prepare everything related to teaching and the result of the teaching is proven... After being trusted to be the school principal, I think about how to improve the education quality in this school that I lead... I was motivated in the PLC. One of the benefits (of QTF) is to improve teacher's quality. I feel it myself that it brings huge and useful benefits for me. It helps me in the teaching and learning process. (Steven, POST2)

Steven's comment shows that his involvement in the PLC contributed to his increased confidence in his teaching and extended to his confidence about bringing about changes in his school in his role of principal; he said that he now advised his staff to adopt the QTF PLC in their practice.

EFL teachers' satisfaction with students' classroom work

Interview data showed that the participating EFL teachers said they felt satisfied with their students' work after they had been involved in the PLC. This could be attributed to the influence of the QTF on their teaching. Melinda shared: "I give my students an assignment and I can evaluate their work based on the task criteria that I give to them... I feel satisfied to see the results of my students' work. Honestly, it is very different from the previous year" (Melinda, POST2). She described the positive impact of using the explicit quality criteria element from the QTF in her teaching and said that her students became more self-regulated in doing lesson tasks. She found that giving students the task criteria helped them to have a clear idea of the expectations she had of their learning, and this gave them confidence to work on the given tasks.

Likewise, Steven revealed that:

I think QTF PLC is a very helpful tool for teachers, especially EFL teachers in order to prepare the content of the lessons for teaching the students. I am very happy and from the results of using it, the students achieve better results, the evaluations of learning show that students have gained more knowledge and good scores. (Steven, POST2)

Steven also added that there was a positive change in his teaching quality because he integrated more teaching aids in his lessons to enable students to better understand the topic of a lesson. He described the positive impact of the PLC on his teaching, students' learning and on his own self-efficacy for teaching.

Ruben also thought the QTF was a good tool for evaluating the effect of teaching on the quality of students' learning:

I think the Quality Teaching Framework is a good standard to be applied in the education sector, I mean in the school because we could measure the results. So, we could measure the extent or quality of learning, whether it is good or not good. I feel that the quality teaching framework has helped me personally to measure how far the learning that I provide is useful for my students or to what extent the learning concept that I give has been received by the students. (Ruben, POST2)

These comments indicate that the PLC with the QTF contributed positively to the development of the teachers' PCK beliefs and helped increase their self-efficacy.

6.5.1.2.3 EFL teachers' shared responsibility for student learning

Interview data showed that the PLC intervention impacted positively on all teachers' sense of professional responsibility, as shown by Melinda's discussion of the way she felt about teaching students:

Because teachers' responsibility is actually very heavy which is to educate human beings to be better human beings, to be a person with integrity, a whole person. So, if a teacher wants to educate the students to have high qualities as humans then the teacher has to embrace the challenges of the work to do something good sincerely from the heart. So, after the quality teaching framework intervention, it really helps me personally. (Melinda, POST2).

Melinda talked about becoming aware of her responsibility as a teacher and wanting to provide high-quality teaching and learning experiences for her students. She said that the QTF PLC helped her see that her moral obligation was to provide the best teaching and learning quality possible for her students.

The other teachers also shared this view about their responsibility for student learning, as shown by Ruben's comment:

It is like what I have said before, frankly the QTF is about how to measure our teaching quality, so if I could make my teaching meet the QTF standard, it means the lesson would be more meaningful and be more beneficial for the students... Another example, during the lesson, I keep thinking on how to give the task criteria to my students so they could know what the goals of the topic or what they need to achieve to build a good learning environment in the classroom so the students could have a safe learning environment... So, I become more aware of designing my lesson plans, student tasks and how the learning is conducted in the classroom. I try to measure some aspects of my teaching and student learning using the quality teaching framework from the PLC. (Ruben, POST2)

These comments show that the PLC had contributed to increasing the sense of responsibility for students' learning of these teachers.

6.5.1.2.4 EFL teachers' knowledge transfer and professional agency

Interview data showed that the teachers had transferred knowledge gained in the PLC by wanting to encourage their colleagues teaching in different subject areas to become involved in a PLC collaboration. Steven, who became School B's new principal, commented that he drew on his experience of working in the PLC intervention when he conducted MGMP school-level workshops for teachers on his staff. In the workshops he helped teachers to work in subject area teams to prepare their lesson plans and to complete other important documents related to teaching and learning before the semester commenced. Steven commented:

For example, we used to find it very difficult to design our own lesson plans, but through this team work or teaching team, all teachers could work collaboratively to have complete lesson plans. In the school self-evaluation program and MGMP, we have worked as a team and it has brought us success to complete all the required teacher tasks in curriculum 2013. (Steven, POST2)

Steven showed that he was able to transfer his knowledge from the PLC intervention and had become an agent of change in his school; he was working to improve the quality of teaching and learning in his school. It is satisfying to see that his PLC experience was helping him begin to transform the professional learning culture of his school.

Melinda also revealed that even though she did not continue to work in a PLC, she continued to share her knowledge with her colleagues in an informal way through conversations in the teachers' room. She shared her knowledge about designing and implementing lesson plans so that her colleagues could learn from her experience. However, she noted that there was resistance to change from some of her fellow teachers.

These EFL teachers based in rural schools discussed how they continued to have dialogue with their colleagues on aspects of teaching and learning a year after the PLC intervention concluded. The dialogue was in casual conversations during breaks and non-instructional time, as explained by Petrus:

It wasn't the same when we just finished the intervention because we usually discussed about our teaching with Mateos and Diana. But we don't conduct PLC anymore. We just have informal discussions in the teachers' room, we never observe each other. (Petrus, POST2)

In addition, Ruben said: "after the intervention, there is no PLC, we possibly just had unstructured discussion, or we asked questions about teaching and learning to each other" (Ruben, POST2).

It can be seen that the teachers started to have unstructured discussions about their teaching and learning but these were very brief. Although they

had shown progress and were becoming agents of change in their schools, they would need more support in a structured PLC to continue sharing their knowledge with each other and other staff members. If this knowledge transfer process is to continue the teachers would need continued time and support for their professional learning.

6.5.1.3 The sustainability of gains from the PLC on EFL teachers' teaching practice

This section addresses research question RQ 1 about the sustainability of any gains from a PLC intervention designed to strengthen EFL teachers' PCK and develop their teaching practices in rural areas in Indonesia. In this section detail is given about changes EFL teachers had made in their teaching and learning practices a year after the PLC intervention in order to consider the sustainability of the intervention.

6.5.1.3.1 EFL teachers' lesson plan quality

Interview data showed that the EFL teachers reported that their collaboration in designing lesson plans had positively impacted their knowledge of how to design a lesson plan and implement it in their EFL lessons:

Last year, we copy and paste the lesson plans. I have to be frank about the copy and paste practice as a teacher. The lesson plans were very thick last year, but after the PLC intervention, we as teachers have to evaluate and consider what students should do or what the students could do actually. So, it is not just about giving very thick lesson plans, but the teachers should adjust the lesson plans to the real condition in the classroom practice, to students' real condition... So, we could evaluate what I am doing in this class is to help students to actually do the task. It is not only about listing things in the lesson plans and not actually applying those things in the lesson plans a hundred percent in reality. (Melinda, POST2)

Melinda's comments show that the PLC was continuing to have a positive impact on her ability to design lesson plans with a focus on one main topic. She said that she evaluated learning activities to be included in her lesson plans rather than randomly including learning activities as she had

done before. A year after the PLC she had progressed her ability to choose activities that would suit the topic and its learning goals and was able to consider students' characteristics in her planning.

Petrus thought that the PLC helped him, as a novice teacher, improve the design of his lesson plans and to integrate aspects of the QTF into them. He expressed the view that he needed to learn more about the QTF so that he could continue to develop his understanding of ways he could use it in his teaching. Steven said that he found that after the PLC intervention, the EFL teachers worked as a team and found it easier to exchange ideas with each other as they prepared their lesson plans; he also commented that the PLC helped him to make his lessons fun.

Ruben also said that the PLC had contributed to his knowledge about designing lesson plans and that a year later he still considered some aspects of the QTF in his planning. Inspection of lesson plans made by Ruben and Petrus supported their comments.

Overall, the four EFL teachers said they were better able to structure their lesson plans a year after the PLC intervention. Although they had progressed in their general knowledge of designing lesson plans, they did not include HOT activities in their lesson plans as they did during the PLC intervention; this could be due to not having support from a PLC about how to do so. This shows that some aspects of knowledge gained in the PLC were being sustained without a dedicated PLC but others, such as integrating HOT into their lesson planning, were not.

6.5.1.3.2 EFL teachers' quality of teaching

A year after the PLC intervention finished, the teachers said their practices were still influenced by the professional learning experience in the PLC to some extent. This is shown by the following comment made by Ruben: "I feel that the QTF has helped me personally to measure how far the learning that I provide is useful for my students or to what extent the learning concept that I give could be received by the students" (Ruben,

POST2). A year after the PLC intervention, Ruben described using the QTF to measure different aspects of students' learning and recommended that the QTF should be used in the education sector to measure learning results generally. He said that he had made some changes in the way he applied some of the QTF elements, but that he had not really achieved good results from the way he had done this. He had started to think about giving task criteria to students to help them achieve learning goals in lessons and started encouraging the development of a safe learning environment for his students. His limited understanding of some of the elements of the QTF inhibited his application of the QTF, indicating that he needed continued guidance and professional learning to help him understand and apply these new ideas.

Steven revealed:

I think PLC is very helpful tool for teachers, especially EFL teachers in order to prepare the content of the lessons for teaching students. I am very happy...from the results of using it, the students achieve better results, the evaluation of learning shows that students gain more knowledge and good scores... There is a change in teacher teaching quality (Steven, POST2).

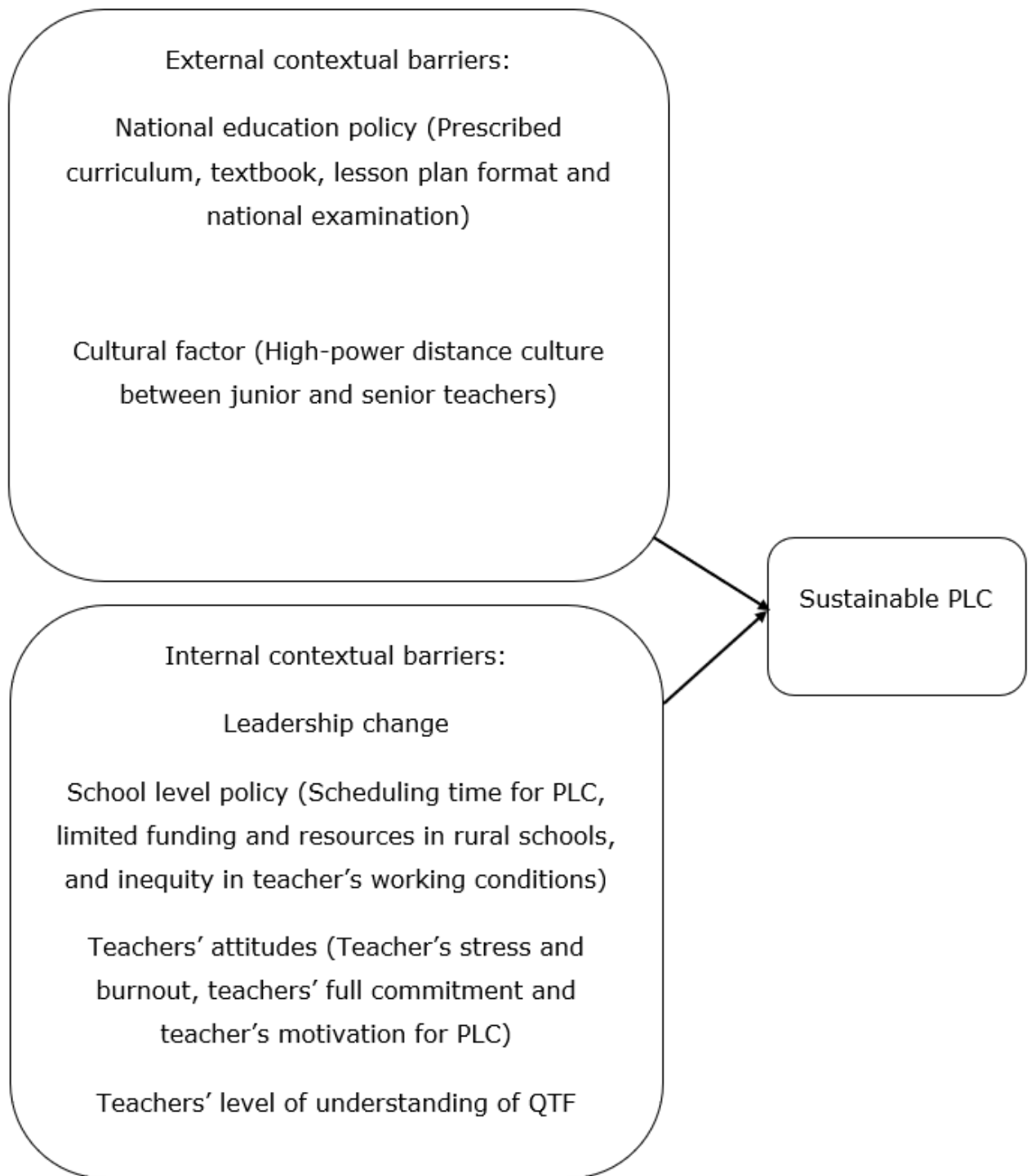
Steven reported that he had benefited from the PLC intervention because he was able to improve the quality of his EFL teaching and students' learning. He reported that the PLC was a helpful tool for guiding teachers in preparing teaching and learning content for EFL lessons. He believed that his teaching had changed because he was integrating more teaching aids in his lessons to enable students to better understand the content; he had noticed that students were better able to respond to questions asked in the classroom. Melinda also indicated that she valued the QTF as a useful guideline for high quality teaching, and Petrus demonstrated his knowledge of the QTF when he talked about integrating cultural knowledge and examples from students' daily lives into his teaching to help them understand topics.

Although they reported some changes to their teaching quality after participating in the PLC intervention, the teachers did not continue to integrate and implement teaching HOT in their lessons, as shown by Ruben and Petrus' lesson plans. During the PLC the teachers had not developed their knowledge of HOT to a point where they could implement it, and this limited knowledge of HOT concepts hindered them from making further efforts to include HOT activities (analysing, evaluating and creating) in their EFL teaching. These findings suggest that the teachers would benefit from continuing professional learning to be able to develop their understanding of the concept of HOT so they would be able to plan learning activities to implement it effectively. If understanding is at an early stage of development (as it was with HOT) then sustainability is difficult to achieve and unlikely to happen without continued support from professional learning.

6.5.2 The challenges of a sustainable PLC implementation

This section presents findings to answer research question RQ 2 about the challenges for sustaining the PLC in schools in rural areas in eastern Indonesia. The participating EFL teachers talked about facing some challenges after the completion of the PLC and these hindered them from continuing it alone. The impediments to sustaining the PLC in both schools could be categorised into external and internal contextual barriers. Figure 6.8 shows factors that posed barriers that influenced the sustainability of the PLC in this study.

Figure 6.8 External and internal barriers for PLC sustainability



These barriers to the sustainability of a PLC are discussed below.

6.5.2.1 External contextual barriers to the sustainability of the PLC

This section presents findings from interviews related to external factors that were outside of the teachers' control and posed barriers to sustaining the PLC in both rural schools where the PLC intervention had been carried out a year earlier.

6.5.2.1.1 National education policy

National education policy barriers refer to challenges that are posed by the education system in Indonesia that influenced the sustainability of the PLC and the teaching of HOT. In this section, there is a discussion of the findings related to comments made by teachers in interviews.

Prescribed curriculum, textbook and lesson plan format

The Indonesian education system employs a predetermined 2013 curriculum, prescribed textbook and lesson plan format. The new EFL 2013 curriculum was intended to help students learn how to use HOT. EFL teachers are generally given a book of guidelines, a student handbook, and a predesigned lesson format which they are obligated to use in their teaching of the prescribed topics. Following completion of the PLC, the teachers did not modify textbook activities to include HOT activities in their classroom teaching. The teachers said they struggled to follow the prescribed lesson plan format and had difficulty integrating different aspects of the QTF without the support gained in the PLC.

For example, in this regency the format of the lesson plans has been regulated for us. So, to implement the QTF into the lesson plans would make my lesson plans look different from other teachers' lesson plans. It would be different if we are given freedom to design our own lesson plan format, then it should help us. But we do not get any freedom for changing it. It limits the way we design the lesson plans. (Petrus, POST2)

Petrus' comment shows that the predetermined format posed a hindrance to his planning because he had to follow it strictly. Ruben said: "In fact, the given lesson plan format does not reflect all the elements of the

quality teaching framework" (Ruben, POST2). His comments show that the prescribed format did not allow him to include elements of QTF. Having to comply with the prescribed curriculum and submit common lessons for approval acted as a barrier to these teachers being able to develop the quality of their lessons and worked against the sustainability of insights the teachers had gained in the PLC.

Teaching for testing – the National Examination

The interviews revealed that, at the time of the study, students were required to sit for a national examination at the end of grades six, nine and twelve so that they could continue their education to the next level. The national examination is a high stakes mandatory test that students have to pass and the teachers indicated that they would do anything to help their students succeed in this examination. They said they would not hesitate to replace teaching and learning time with teaching their students questions they needed to answer in the national examination:

From January until March, I didn't do many things because I had responsibility as the person in charge to oversee the national examination at school. So, the students in grade seven and eight did not really learn maximally in their lessons, because their time is used for activities to prepare for the national examination in March. (Steven, POST2)

Steven described focusing on preparing students to face the national examination which precluded him from teaching the topics from the EFL text book (Kemendikbud, 2014b) or teaching students about HOT. Steven also talked about not really preparing his teaching thoroughly because he was busy supervising the national examination process in the school.

Ruben also shared: "since next year the students should have focus only on learning towards the national examination questions. That is why, I could only teach them three basic competencies, and the last competency was about labels" (Ruben, POST2). Examination of Ruben's lesson plans confirmed that he had been concentrating his teaching on developing students' remembering and understanding of lesson topics rather than

learning about analysing or any other HOT ideas to prepare for the national examination.

Petrus expressed his concern about students being underprepared for the national examination:

It is usually during this time of the year; all schools have started the preparation for the national examination for the grade nine students. But this school hasn't started it yet until now. This is because the school principal doesn't have the capacity to manage the school funds. (Petrus, POST2)

Petrus indicates that preparing students for the national examination should be the priority of his school principal. It was clear that teaching HOT ceased to be a priority for the teachers in each school because it was over-ridden by their responsibility to ensure they had a good graduation percentage. These EFL teachers said they would teach to the test because they would be scrutinised by the Education Department and the head of the regency if the national examination result was not good with many students not passing it. Teaching to the test can be seen as a systemic barrier to the sustainability of reform efforts to improve the quality of teaching and learning. Any innovative program to enhance teachers' professional learning, such as a PLC, is not likely to be successful if teachers find that their efforts are not supported by the education system. This would impact the sustainability of such programs as well.

Melinda stated:

For instance, I have a schedule to teach an extra course for preparation for the national examination for grade 12. We usually have a little bit of time to discuss the questions from the previous year's national examination. Three of us, the EFL teachers including Ruben, Nick and I, discussed the answers of the [national examination] questions before we entered the classroom and discussed those questions with students. (Melinda, POST2)

Melinda did not continue to use the QTF in a PLC after the completion of the intervention. She described her frustration when she tried to invite

her EFL teaching colleagues to work in a PLC to discuss their teaching strategies, but instead of talking about strategies, the discussion centred on talking about an extra EFL course tailored to preparing students for the national examination. This is a common phenomenon in Indonesia where teachers typically do not discuss their teaching strategies, methods and student learning, but talk about how they will teach the national examination questions. This systemic barrier is likely to have worked against the sustainability of a professional learning intervention such as the PLC conducted in this investigation.

6.5.2.1.2 Local culture - High power distance culture between Junior and senior teachers

The interviews revealed that the EFL teachers found it hard to continue using the PLC because of cultural factors in their rural schools. There was a high-power distance within the culture that impacted on the sustainability of the PLC. There is an emphasis in Indonesia on the relationship between the elder members of society and the younger ones (in this case older and younger teachers). Hofstede (2020) reported that this hindered teachers from providing critical feedback to their colleagues in their professional interactions. Melinda's comment exemplified this: "the senior teacher does not want to accept the views from junior teachers" (Melinda, POST2). Melinda revealed that because senior teachers did not want to accept feedback from junior teachers, she would not give them feedback. However, she hoped senior teachers would share their expertise about high quality teaching with junior teachers.

Likewise, Petrus said:

If I provide feedback for them, then I would be hesitant until now. The reason is firstly, they are seniors; there is a view from some that I am considered as a young child, but I dare to tell them things, I don't know anything. It makes me hesitant to provide feedback. Our feedback would not be considered important because we are junior teachers. It makes me hesitant. (Petrus, POST2).

Petrus showed that the issue of power distance made him hesitant to give feedback to older teachers. He added that he would be hesitant to provide critical feedback to other senior colleagues who were not part of the PLC, due to them considering him to be a junior teacher with limited experience in teaching. This issue of high-power distance could erode support for novice teachers in these rural schools; without the support of colleagues in a PLC, any gains from the intervention would not be likely to be sustained over time.

Steven, an experienced senior teacher in the school, revealed that he would accept feedback but only if it was constructive. He would be careful about who he gave feedback to because there were some teachers who did not welcome any feedback. Similarly, Ruben, who was also a senior teacher in the school, echoed these comments when he talked about the way he would consider feedback from junior teachers, saying that if the feedback was reasonable and useful for his improvement in teaching, he would evaluate it critically before accepting it. High-power distance was indicated in his statement that any feedback from senior teachers would be accepted, including harsh feedback, but that any feedback from junior teachers would be filtered or evaluated before it was accepted. Ruben discussed his concerns about providing feedback to other colleagues and said that he thought feedback should be given carefully to teachers because some teachers did not like to receive feedback at all.

The comments by the teachers show that there was an awareness of cultural barriers to providing feedback in this school community. This situation is common practice in eastern cultures where elder members of the community are considered to have authority, meaning that it is difficult for younger members to challenge them (Hofstede, 2020). Overall, teachers said they were careful about providing and receiving feedback because of their cultural awareness of the nature of relationships between younger and older members in their school community. With feedback being a central aspect of a PLC, it can be seen

that teachers being reluctant to give and receive it would compromise its operation and certainly its sustainability in the absence of any support from a facilitator.

6.5.2.2. Internal contextual barriers to sustainability of the PLC

There were some internal factors that posed challenges to sustaining the PLC which are discussed in this section.

6.5.2.2.1 Leadership change

School leadership is important for providing teachers with a positive school climate, stability, support and good working conditions (Bellei et al., 2020). All of the teachers reported that leadership support was crucial if they were to be able to continue their collaboration in the PLC after the intervention concluded. A change in School A's leadership influenced the policy about the way school funds could be spent, impacting on support for the continuation of the PLC:

It is because there is a change of school principal. Yes, all activities in the school are not funded anymore from school funding, such as Marching Band activity. We don't run the Marching Band activity anymore. Because it is told that the school uses a 15% fund system only. So, the impact is not felt by me alone. Other teachers who conduct extracurricular activities also feel the impact of the decision... This is because the school principal doesn't have the capacity to manage the school funds... Many activities in the school are stopped such as marching band, dance club, and student association activity. All those activities are being stopped because all the teachers who run those activities want it to be funded by school, but the school could not do it anymore. The school should have given us support to perform teaching better. But there is no appreciation for teaching and learning achievement. No practical support is given. (Petrus, POST2)

It can be seen that Petrus reflected on the withdrawal of school funding for professional development and considered financial policies and decisions to be unfair. The withdrawal of funds impacted on the sustainability of the PLC. The leadership change in School B did not

impact teachers negatively because Steven (the new principal) had been one of the EFL teachers participating in the PLC intervention and he said he was trying to continue to implement some of the collaborative practices used in the PLC. Supportive school leadership is needed for the sustainability of teachers' professional learning focused on improving the quality of their teaching practices. If it is absent then initiatives such as a PLC will not be sustained.

6.5.2.2.2 **School level policy**

Structural conditions – Scheduling time for a PLC

Having a formally scheduled time for teachers to plan and prepare lessons is related to a school's structural conditions. This type of support aids the effectiveness of a collaboration such as the PLC (Louis et al., 1996; Marks & Louis, 1999). During the PLC intervention, teachers had stated that time constraints were their main challenge because they had to arrange for the PLC to be at a time when all of the PLC members could attend, and if one member did not come, the meeting was affected.

The teachers in both schools said that structural support, in terms of having scheduled planning time, was not available after the completion of the PLC intervention. For this reason, they were not able to arrange their meeting schedules so they could continue to participate in the PLC. Furthermore, the time teachers spent on other work commitments and on other responsibilities and roles in their schools (not only teaching) impinged on the time they could spend working in the PLC. Melinda explained: "we don't conduct any PLC meetings anymore here now. We just have professional chats because we have limited time available, we feel tired and exhausted too" (Melinda, POST2). Melinda talked about having limited time available to conduct a PLC and said that most of the time she felt tired or exhausted after teaching. Not having enough time reduced her commitment to continuing the PLC, underlining the need for

principals to ensure that time is allocated to professional learning endeavours such as a PLC, otherwise it is not sustainable.

Ruben talked about how the time for EFL lessons had been reduced to 80 minutes per class and 160 minutes per week and said that for this reason there was not enough time for students to learn about HOT. He explained: "... After the intervention, there is no PLC... we don't continue the PLC because we are too busy with other things... so, in order to be able to do it in a group, we need a policy from the school principal" (Ruben, POST2). His comment showed that time limitations, busy schedules and other responsibilities hindered the continuation of the PLC where they were learning about teaching HOT. He suggested that a school policy would assist them to continue working in a PLC because time would be included for professional learning.

Petrus said that he had limited time for the PLC because he had to manage family commitments and make an extra income: "I don't even have time anymore to design lesson plans, because my time is used to make extra an income from my outside school job" (Petrus, POST2). Without supportive working conditions, teachers would find it difficult to continue any professional learning. When talking about teachers' absenteeism, Petrus made the point that when civil servant teachers did not go to their classes, contract teachers like him had to take the classes for them even though they did not get paid for replacing absent teachers. This practice also reduced the time he had for professional learning. Overall, teachers need to have support from their schools to provide conditions for them to continue working in a PLC; they could have a school policy on planning to have professional learning time or incentives for teachers to further their professional learning in other ways.

Limited funding and supporting resources in rural schools

These EFL teachers working in rural schools reported that the lack of appropriate supporting resources meant that they could not plan and

teach to a high standard. Steven commented: “the differences are teachers in the villages don’t have enough facility to support them, in this case the learning resources” (Steven, POST2). Steven considered the QTF to be a helpful tool for helping him to prepare his lessons but said that he only included some elements from it due to having a lack of resources. The teachers in this remote regency had to provide the best learning they could with limited resources. As part of the PLC intervention, teachers were provided with some low-cost materials to prepare teaching media or aids for students; these did not rely on technology requiring electricity. Without the provision of supporting educational resources, it was difficult for the teachers to support their students who came from low socio-economic backgrounds and had few resources themselves.

Petrus reported that new leadership in School A resulted in decreased availability of resources for teachers:

So, when we want to print our resources, we need paper and need money to buy it. But we don’t have access to it. Then, how we could do our job? It is not only about the paper availability for printing, but also there is limited availability of projector for presenting our teaching to the students in the classroom. So, we could not do anything... Sometimes, I could have access to the projector but then the classroom where I would teach the lesson doesn’t have any electricity connection (Petrus, POST2).

Petrus revealed that the change in the school’s policy on operational spending meant that with few resources he could not do his job properly. Likewise, Melinda said she could not provide students with opportunities to share their knowledge with the wider community because she did not have the resources she needed. She cited the example of wanting to have students make a poster (as listed in the textbook), but not being able to do this because she did not have any media that could be used to make the poster. This barrier discouraged teachers from being innovative because if they did not have resources, they would need to spend their own money to buy all the learning media required for lessons; they did not earn enough money to be able to afford to do this.

The teachers also reported challenges in continuing to use videos for reflection in a PLC. Petrus said: "but I have never recorded any video of my teaching, Mam. Firstly, there is no equipment to video record my teaching" (Petrus, POST2). Petrus talked about audio recording his teaching using his mobile phone but said he could not continue to record his teaching using other video recording devices because there were none in his school. He was concerned about the privacy of his recording because his mobile phone could be accessed by his other family members at home, and for this reason he deleted it after listening to it, which limited further opportunities to reflect on his teaching.

Similarly, Ruben said that he did not continue to record his teaching even though he knew there were benefits in using videos to reflect on and improve his teaching. He commented that he had recorded his teaching practice several times before the PLC intervention, when he taught EFL on another island, but since it was not his top priority and was not a focus in his school, he forgot about video recording his teaching practices following the PLC intervention. He said: "I mean that I just realised that I should have continued to record my teaching, because it is a very good input for me to be able to reflect on my teaching practice. But I forget to do it" (Ruben, POST2).

Melinda did not continue to record her teaching either because she did not have any video equipment or compatible mobile phone to record her teaching practice. She explained: "I have not continued recording, because I don't have any camera video..." (Melinda, POST2). Steven also shared there had been a discussion among EFL teachers at his school about continuing to record their teaching, but the lack of equipment prohibited them from doing this. He said: "So, we could not do it [recording] yet because we don't have the equipment [video camera] for it" (Steven, POST2).

Overall, the teachers described limited funding and a lack of resources as a barrier to continuing to carry out professional learning in a PLC. They had limited access to basic resources for teaching (such as board markers and ink for writing the lesson in the classroom) and they had no access to video cameras to be able to continue recording their lessons. Comments made by the teachers indicate the inequity that teachers in rural schools face in their efforts to provide a sound education for their EFL students, especially when compared with schools in more affluent areas of the country.

Inequity in teachers' working conditions

The findings of Study 3 revealed that these EFL teachers experienced organisational injustice in being able to carry out their teaching in their rural schools. Petrus from School A said that his low level of pay meant that he was forced to get a second job which impacted on the time he could spend preparing lessons:

Firstly Mam, Frankly I feel a bit discouraged to teach because I have a family now and the barrier now is our salary is only Rp 240, 000 (AU\$24). I come from an area far from the school site and I must spend my whole day here doing school work. However, I must think about how to afford things for my family. It makes me feel discouraged. Before I start my family, it is okay. Because my salary was enough for one person, but now the salary is reduced significantly, three times less than the former amount. We don't even have time anymore to design lesson plans, because our time is used to make extra income from outside school jobs. The salary from the school is not enough. (Petrus, POST2)

In addition to having his salary reduced and needing to engage in paid work outside his teaching job, Petrus experienced inequity in his access to training to help teachers implement Curriculum 2013 because of his status as a contract teacher. The only professional learning that he had as a novice teacher was the PLC intervention. Petrus' experience suggested that poor working conditions for contract teachers like him would influence the sustainability of any professional learning intervention

because they had little time to spend on professional learning to improve the quality of their teaching.

6.5.2.2.3 Influences on teachers' attitudes to a PLC

Teachers' stress and burnout

Teachers' stress and burnout impacted negatively on their professional learning and teaching quality. Petrus in School A talked about the stress he experienced because he did not receive enough support to do his job as a teacher:

I requested a prayer through counselling phone line, I sent short messages last night and asked through a phone line in a TV program... I feel weak and not capable and doubt about my ability, so I ask to be prayed for. The counsellor replied to me that Lord Jesus will help me in going through this. (Petrus, POST2)

The comment showed that this teacher was stressed by the conditions under which he worked and that this was affecting his wellbeing. The same teacher spoke of his intention to leave teaching as the result of the stress of his lowly paid contract teaching job:

As I tell you that I don't have time to design the lesson using the QTF. I don't know about whether Mateos and Diana still use it. I don't use it anymore. Like I share with you, I have situations firstly my family and salary. In order to be able to design lessons using the QTF, I need time, but I have to spend time with my family and I have a very small salary. Even, we have to buy board makers, ink, using our own money and with the salary like this, it is hard. During the recent semester test, I had to copy the question sheets using my own money. So, I feel very frustrated about it. It seems that I work for nothing... We spend all our income just for filling up on fuel and other necessities. (Petrus, POST2)

The financial injustice that Petrus experienced had impacted on his willingness to continue working in the current school and he was planning to move from the school when he could afford to do this. He was showing signs of burnout and his perception of organisational justice was impacting on his evaluation of whether or not he should continue teaching

(Capone & Petrillo, 2016). Melinda also shared that "... we don't conduct any PLC meetings anymore here now... we have limited time available, we feel tired and exhausted too." Her comment showed that her wellbeing was also low and that this had influenced PLC continuation. Overall, teachers with contract-based employment status showed low well-being because they had low income, while teachers with civil servant employment status did not address this issue because they had better pay than those who were not employed on the same terms.

Challenges for teachers' full commitment to the PLC

During the PLC intervention, commitment from the participant teachers was a crucial aspect of its success. Working collaboratively meant that it was important that each member did the required individual work. Ruben said: "one of the challenges is commitment. It is how we continue to commit to keep doing the PLC to improve the quality and be consistent on how we keep the learning spirit for collaborative learning and sharing" (Ruben, POST2). Teachers' continued commitment was an important aspect of ensuring that the intervention could be sustained long term. This is shown by Petrus' comment:

Firstly, it is because the intervention requires a long-time involvement, you need to consider whether your participants are really serious about their commitment for participating or they just say they want to participate but they are not really serious about it... It is important to make sure that the participants are those who commit to do the intervention sincerely. (Petrus, POST2).

Continuing to pursue professional learning needed the commitment of all PLC members and this could not happen if they did not attend meetings. Melinda pointed out: "It is teacher availability. I mean whether the teachers are ready to join the intervention or not, because sometimes there are some teachers who are lazy too" (Melinda, POST2). This issue of low attendance had been posed as a threat when the intervention began, because the intervention relied on teachers getting feedback from a

particular teacher in the PLC; if that teacher was absent the collaboration was compromised. Overall, teachers' commitment to regular participation was an important factor in sustaining the PLC intervention when it was run initially and over an extended period of time. They needed to want to be involved in the professional learning sessions and be able to invest the time needed to sustain the innovation.

Motivation for pursuing professional learning

During the PLC intervention, the teachers sometimes found it hard to motivate themselves to be part of the PLC because they had to spend a substantial amount of time and energy to work as part of it. They needed a high level of collaboration with other teachers and needed to be motivated to produce high quality lessons that incorporated high quality teaching practices. Petrus commented: "I mean that I want to make the PLC, but other teachers want to go home earlier" (Petrus, POST2). The school had a policy of teachers staying until 2 p.m., but when the school leadership changed, the new principal did not require teachers to stay beyond the end of the working day so most went straight home. Ruben also commented: "For the challenge is more about the willpower to improve the teaching and learning quality or how to implement the QTF more practically in the teaching and learning" (Ruben, POST2). Comments showed that teachers in both schools wanted to develop their ability to design high quality lesson plans but lacked the motivation to continue trying to work in a PLC; this could have been exacerbated by not having a facilitator.

6.5.2.2.4 Teachers' level of understanding of the QTF

One barrier to the continuation of the PLC was teachers' limited understanding of some of the QTF elements which resulted in them picking and choosing elements they would use:

The QTF is too wow for me. There are some parts of the quality teaching framework, for instance the use of metalanguage, or deep understanding and others are too difficult for me to see how

it could be in real life or seeing it as a practical tool is a bit hard for me. (Ruben, POST2)

Ruben confessed that he found it hard and impractical to implement the QTF elements because some of them were too difficult for him to understand and apply. Petrus said he realised that he needed to learn more about the QTF to implement it successfully in the future. Although the intervention had lasted for 9 weeks, it seems that teachers needed more time to understand how to use the QTF elements in their teaching practice. This suggests that further regular and on-going PLC sessions could have been beneficial for these teachers.

The PLC intervention had helped the teachers gain some understanding of ways they could use the QTF and plan to integrate HOTS into their EFL lessons. During the intervention they received support from the researcher but were not able to continue to develop their understanding of these new ideas without continued support.

6.5.3 Recommendations for sustaining the PLC implementation

This section addresses research question RQ 3 about recommendations that can be made to promote the long-term sustainability of a PLC in rural schools in Indonesia. The section below outlines teachers' recommendations for the improvement of the PLC and for its sustainability.

6.5.3.1 School leadership support for a PLC

School leadership was significant in supporting each teacher's professional learning in the PLC and for the sustainability of the PLC in these rural schools. School leadership support has been found to contribute to sustainability of school improvement initiatives (Askill-Williams, 2017; Bellei et al., 2020; Day, 2005a, 2005b). Ruben said: "there is a need for policy from the school leader about it. So, we could have will power to do it" (Ruben, POST2). Steven emphasised the importance of having the

school principal's support for buying resources when implementing educational innovations:

After being trusted to be the school principal, I think about how to improve the education quality in this school that I lead. I think about things that I get and motivate me in the PLC. I think that providing teaching resources and aid is our priority. We would evaluate the priority in providing the teaching aid, if the teaching aid is simple, easy to access and cheap, then we should make it available, such as, having colourful papers, colourful pencils or pens and board markers. We could postpone getting laboratory tools, especially the tools which would not be used all the time. (Steven, POST2)

Money for resources and a policy that encouraged teachers' professional learning would help shape the school culture and could help develop a climate of professional learning collaboration among teachers. Sustainable school improvement has been found to be positively connected to schools that have strong cultural elements, such as "academic press, student support, trust & respect, low negativity (or optimism as the opposite of negativity), professional learning community (consisting of shared responsibility, reflective dialogue, deprivatized practice, and organizational learning)" (Lee & Louis, 2019, p. 91). A strong school culture of working together to improve teaching and learning could help teachers assume some leadership in conducting professional learning activities with their colleagues in the school and help other teachers to prioritise spending time on professional learning activities.

Melinda saw the benefit for teachers' involvement of a school principal being actively engaged in teachers' professional learning by monitoring and supervising the implementation of a PLC. The new principal in Melinda's school had participated in the PLC, and he decided to conduct teachers' working group/MGMP in the school to provide opportunities for teachers to work collaboratively to prepare their teaching for the next semester. He checked teachers' work and monitored their work schedules properly. This suggests the value of school leaders having school policies

on professional learning that emphasise collaboration where teachers learn with and from their colleagues.

Steven's experience in the PLC had led him to evaluate his leadership in the school and to plan to improve the quality of education in it. His priority was to ensure the availability of teaching aids and resources for all teachers because he believed they were necessary for teachers to teach well. Steven's decisions as the new school principal were influenced by his participation in the PLC. He described how he initiated a collaborative activity with nearby schools to help teachers prepare their teaching and learning because he considered that all schools needed to provide good quality teaching and learning experiences for their students. His informed leadership was playing an important role in sustaining some aspects of the PLC.

6.5.3.2 Schedule regular and continuous times for PLC meetings

The teachers recognised the importance of having an ongoing PLC for the sustainability of changes made to their teaching practices through the PLC. Time was an important aspect for ensuring that teachers developed their understanding in the PLC. Steven commented: "it is expected that we have training or a group like PLC continuously in order to improve the quality of teaching and evaluation can be done well" (Steven, POST2).

Ruben talked about the timing of PLC meetings and activities:

I mean probably we can agree on an appropriate time for each of us. So, we can be more maximal in following the quality teaching framework. When we design the lesson plan and before it is used in the classroom, it would be good to have a briefing on the lesson plan beforehand. The briefing would be useful to revise the lesson plan before teaching. The briefing would be better to take place several days before the actual teaching, so the teachers have time to revise it or if there is any difficulty the teachers could solve it and improve it. (Ruben, POST2)

Ruben highlighted that during the PLC teachers had the chance to design lessons together before teaching them but that it would be better if they

were given more time (several days before teaching) to prepare and revise lessons. Having another briefing after the lesson had been designed (but before they taught the lesson) would have given teachers the opportunity to improve their lesson plans before teaching them. Ruben suggested that it would be better if teachers could get advice about the elements in the QTF as well because they would then know how to vary their teaching activities to fit with the QTF. Although teachers said they were busy with other things, they continued to refer to the QTF framework and used it to some extent to guide their lesson preparation and teaching. This practice indicates that they saw its value for their teaching.

Although the PLC was conducted over nine-weeks and differed from a one-day seminar or conference type of professional development program, it seems that teachers needed regular professional learning sessions to develop their teaching practices. Petrus said that his school did not continue the PLC or conduct teaching observations but mentioned that teachers continued to have informal discussions about their teaching. Melinda talked about using a few of the QTF elements in her teaching such as using explicit criteria to help her students do learning tasks in their EFL lessons. She commented that she consulted the QTF in her teaching because she believed it had a positive impact on her students' learning.

Overall, the teachers said they had experienced a positive impact from working in the school-based collaborative PLC. For this reason, they expressed the view that to continue their professional development they would need to have regular meetings and support from other teachers and a facilitator.

6.5.3.3 Facilitator support for the PLC

The EFL teachers indicated that they struggled to implement a PLC without a facilitator and described as significant the role of a facilitator for ensuring the PLC's sustainability:

It should be trained continuously because you trained us for last year only. But if we have an instructor or a facilitator who continues to provide training in small groups or in a big group like what you have done, involving several schools. I am sure that it would be a success especially for EFL teachers. It means to keep doing it continuously and there is a facilitator. If there is no facilitator, like I say before that among teachers, it is rare to have time to facilitate their colleagues to implement it. We have limited time and funds to implement it. (Steven, POST2)

Ruben also agreed: "... there is a need for guidance from a facilitator in order to apply it and to continue it" (Ruben, POST2). The teachers said that the expertise provided by the facilitator (researcher) was significant in the initial PLC and was needed to promote its sustainability across time.

6.5.3.4 Follow-up support programs for a PLC

The EFL teachers reported that they would appreciate having a follow up program to ensure the sustainability of this school innovation (Ingvarson, Meiers, & Beavis, 2005).

6.5.3.4.1 Using mail-services for sending training programs

One suggestion of a way the PLC could be supported came from Petrus, who talked about teachers receiving professional learning materials through mail-services:

If you are happy to send us those teaching and learning resources, I would be able to read those teaching and learning materials. It is helpful through the internet, through the post as well. So, I think that the follow up program would help us to continue to implement and understand the PLC well. It would automatically impact our willingness to continue learning and implementing it in our practice. (Petrus, POST2)

Petrus had said that limited supporting materials for teaching and learning in his school had hindered his professional growth. Having teaching and learning resources materials sent through the post or via the internet would be beneficial for helping teachers to continue their professional learning about implementing new ideas in their practice.

6.5.3.4.2 Using mobile phone applications

Petrus also suggested that the use of an online application (mobile phone) for professional learning would encourage teachers to continue their learning. Although there was an intermittent internet network in this rural area, teachers still had internet access in some locations:

You need to communicate more with those who participate in the intervention. For example, you could make a 'WhatsApp' group with those participating teachers. So, if you want to do the intervention activity with them today, you could get to know them by creating a 'WhatsApp' group. So, even though I am not in the site, I could get additional information through the group chat. (Petrus, POST2)

The suggestion was that the researcher could provide a tool or means for teachers to continue their long-term professional learning, such as a 'WhatsApp' group.

6.5.3.4.3 Mentoring and regular visits

The EFL teachers reported that they would need support from a mentor to encourage and motivate them to keep working in a PLC. Ruben said: "it might be better to have mentoring and regular visitations" (Ruben, POST2). Ruben stated his belief that the role of a facilitator is important in providing guidance for the continuing use of a PLC, and regular visits and mentoring would be helpful for sustaining the PLC.

Melinda also commented on the value of a mentor: "yes, maybe a mentor to be able to give continuously encouragement, social encouragement is very important for a teacher. The thing that you need to know is mentoring is actually needed. We need encouragement in this regency"

(Melinda, POST2). Melinda stressed that a mentor would be important to sustaining the PLC and could provide continued support that would assist teachers to keep collaborating in this way. She valued the facilitator's role for providing appreciation and rewards that encouraged teachers' professional learning. She also talked about the value of mentoring for teachers in rural areas because it could ensure that teachers were encouraged to continue to develop their teaching practice.

Overall, all of the teachers acknowledged that they needed mentoring and regular visits from experts to support their professional learning in their rural schools. However, teachers focused on the method of delivery of materials and resources rather than pedagogical mentoring for individual teachers or groups within the PLC. This showed that the teachers still did not fully understand or appreciate that their pedagogical knowledge and skills should be emphasised more than the number of resources or materials that they received.

6.6 Discussion

Study 3 found that although teachers had experienced positive changes as result of their participation in the initial PLC, they did not continue to implement most of the ideas discussed due to the challenges mentioned. Hence, in this section there is a discussion of ways of overcoming the barriers and recommendations are made for promoting the sustainability of a PLC in rural schools in eastern Indonesia.

6.6.1 The sustainability of gains from a PLC and teaching HOT in rural schools

Although teachers participating in the PLC intervention gained some immediate benefits from their collaboration in it, survey data showed that they were not able to sustain the changes in their PCK and in their teaching practice. This could be due to not continuing the collaborative PLC activities. For example, teachers rarely opened their classroom for other teachers to observe their teaching in the year following the PLC

intervention. The EFL teachers in the PLC intervention group did not spend time throughout the year on collaborative planning activities even though they had found them very useful. They reported having little reflective dialogue with their colleagues where they discussed specific teaching strategies. The challenges they faced seemed to have impacted on the long-term sustainability of the PLC and thus on their PCK growth. Teachers' survey responses indicated that they went back to their old teaching practices and only occasionally considered the various elements of the QTF in their teaching.

In addition, the survey results revealed that there were no supportive structural conditions, with no scheduled time for lesson preparation and collaborative activities that teachers could carry out in a PLC. For example, survey analysis showed that EFL teachers who had participated in the PLC had less than one thirty-minute meeting per week devoted to lesson planning and preparation; this was the same amount of time spent by their counterparts who did not participate in the PLC intervention. Having little scheduled time to meet with colleagues could account for why participants in the PLC were not able to sustain de-privatised practice, collaboration activities, and reflective dialogue that had been instituted in the PLC. These results suggest that the sustainability of any gains from a PLC are in jeopardy if teachers are left unsupported in the period following an intervention such as this.

Quantitative analysis of the Quality Teaching survey revealed that there were no significant changes in EFL teachers' responses from the pre-intervention survey to the post-intervention survey a year later, with the exception of the quality learning environment dimension. In their post intervention interviews, Melinda, Ruben and Steven reported that the PLC helped them to reflect on their practice of using corporal punishment and this contributed to a shift in their thinking about not using it. This suggests that the PLC could contribute to helping teachers learn other strategies to ensure a supportive learning environment is available for

their students. However, with no continuing professional learning activity available to them, the EFL teachers found themselves struggling to translate the knowledge gained from the PLC into their long-term teaching practice.

It is often noticed that teachers who are involved in professional learning for a day look enthusiastic about implementing their new learning but when they go back to their schools they disregard what they learned and revert to their previous practices. It is not enough to rely on a few teachers as local champions to sustain professional learning, there is a need for involvement of the whole school community to sustain the professional learning program or implementation (Askeff-Williams, 2017). This study showed a different perspective that professional learning organisers might not be able to see, because the researcher was able to investigate teachers' progress not only during the PLC intervention but also one year after the intervention was completed. Even though the researcher engaged the teachers in intensive professional learning and spent many hours working in collaboration with them, they did not continue to develop their PCK or work collaboratively. Surveying and talking with them a year later provided an opportunity to understand why they did not continue this professional learning that they said they valued.

The teachers were unable to continue to implement their PLC in their schools in the year following the intervention because of various external and internal barriers. This is similar to the findings of other studies that have shown contextual factors (local context and educational policies), institutional factors (leadership, professional learning policy and school climate and culture) and community factors (provider characteristics, individual motivation, beliefs and behaviours) (Bellei et al., 2020; Durlak & DuPre, 2008; Liou, Canrinus, & Daly, 2019; Scheirer, 2005) impact on the sustainability of PLCs in schools.

The findings a year after the PLC intervention was completed have revealed that there is a gap between what teachers say and what they do, the attitudes-behaviour gap, and what they believe and what they do, or the belief-behaviour gap. Another study in Indonesia (Widiastuti, Mukminatien, Prayogo, & Irawati, 2020) also found that there were dissonances between Indonesian teachers' beliefs and their practices related to formative assessment. This showed that although teachers' beliefs had changed, they did not necessarily implement it in their teaching. For example, although they believed that it is important to teach HOT, they still included only LOT a year after the completion of the PLC. This could be due to not having developed a deep knowledge and understanding of HOT concepts at the time of the PLC. It takes time to understand and implement ideas related to critical thinking. There is a considerable cognitive load for them because they have to think about many different aspects of their professional learning such as QTF, PCK, and HOT. More time would be needed to develop their knowledge of these concepts to the point where they could implement them confidently.

In addition, they believed that the QTF as part of the PLC was an important tool for helping them to continue providing high quality teaching for their students, but they did not continue to use it on a regular basis in their schools. This shows the attitude-behaviour gap and belief-behaviour gap in operation. These findings are similar to those of Tam (2015b) who reported that although a PLC could contribute positively to teachers' collaboration and change teachers' beliefs and practice from a traditional view of teaching to a more constructivist one, some teachers may not change their practice because they are used to their old ways of doing things; changing teachers' beliefs and aligning their practice with their new beliefs can take a long time (Tam, 2015b). It could be that teachers believe strongly in their current teaching approach and consequently they only practise it (Widiastuti, et al., 2020). Without collaboration and reflection in a PLC, teachers would not be interrogating

their beliefs and practices and this could explain why teachers were not aligning their practice with their beliefs. It seems that teachers in eastern Indonesia need to have access to an on-going regular PLC if they are to continue investigating their underlying beliefs and developing their PCK.

This study has shown that the national examination system was a hindrance for teachers' development of PCK for teaching HOTS. If critical and creative thinking and problem solving are to be emphasised, national education policies that encourage teaching for testing need to be discouraged and these policies need to be reformed. Teachers are required by the revised 2013 curriculum to include HOTS in their lessons (Yusra & Lestari, 2018), but the national examination system works against this by measuring mostly LOT skills in the sixth, ninth and twelfth grade examinations. Chang et al. (2014) found that a high number of Indonesian teachers believed that their teaching practice and lessons should be aimed at teaching students to pass the national examinations. They believed that the national examinations influenced their PCK conceptualisation so that their teaching was oriented toward practising test items likely to be included in the national examination (Triastuti, 2017).

In this study, teachers did not include HOTS activities in their lesson plans but had reverted to planning mostly LOT goals and activities based on the prescribed textbook. Although the teachers had developed their basic understanding of HOTS concepts after participating in the PLC intervention, a year later only one teacher (Ruben) included analysis skills in his lesson plan. It is important to ensure that teachers are provided with opportunity to develop their deep understanding of the concept of critical thinking and HOTS before focusing on their pedagogy of teaching HOTS (i.e., to read articles about the concepts of critical thinking and HOTS). The other teachers returned to their old practices and seemed to have abandoned attempts to plan HOTS activities, seeing their main purpose to be preparing students to pass the national examinations which mostly include

questions that measure only LOT skills (Putra & Abdullah, 2019; Utami, Nurkamto, & Marmanto, 2019). There is an urgent need to align the curriculum and educational assessment in Indonesia to encourage the integration of explicit HOT instruction in EFL classrooms to achieve sustainable HOT practice in Indonesia.

Furthermore, this study was conducted at the time of transition in the education system in Indonesia and it could provide a model for the development of high-quality professional learning for rural teachers in Indonesia. Recently, Indonesia has launched the new education policy program, *Freedom of Learning (Merdeka Belajar)*, which has proposed changes and reforms for the Indonesian education system in 2021 (Kemendikbud RI, 2019a; 2019b; Nugrahanti, 2019). There are four initiatives in this proposed reform policy that include having an evaluation policy related to USBN or school-based examinations where formative assessment replaces the test system that using multiple-choice assessment. There is a proposition that funds for this examination could be used to improve teachers' ability to undertake formative assessment in their schools (Kemendikbud RI, 2019a; Nugrahanti, 2019). The second initiative is to terminate the national examination by 2021 and replace it with a new assessment called the Assessment of Minimum Competency and Survey of Character (literacy, numeracy, and character education strengthening). The new assessment uses formative assessment that measures HOT rather than being used to determine whether students should continue to the next level of education. The plan will be based on the assessment outcomes of PISA and TIMSS (Kemendikbud RI, 2019a; Nugrahanti, 2019) which emphasise problem solving that requires HOT. The third initiative is to simplify the lesson plan format so that one-page lesson plans are used with a focus on three components: the goals of the lesson, learning activities and learning assessment. The intention is to help teachers focus on preparing high quality lessons rather than doing administrative work only (Kemendikbud RI, 2019a; Nugrahanti, 2019).

The proposed initiatives address some of the issues that this study has found to be barriers to implementing a new type of professional learning (PLC) and underline the need to ensure that teachers are supported in the long-term implementation of new ways of teaching.

In addition, the results of this study suggest that there is a need to align national educational policy with assessment practices to promote HOT. This finding is in keeping with recommendations made by Timperley and Alton-Lee (2008): “an immediate challenge for policy is to attend to situations where teacher professional development may be doing harm or wasting investment through undermining rather than optimizing educational opportunities for students... Systemic responses are needed from different jurisdictions whether at national, federal, state, or regional levels” (pp. 360-361). Thus, there is an urgent need to align the components of the education system in Indonesia.

6.6.2 Overcoming the challenges for PLC sustainability: School leadership role for shaping a positive school culture and climate for a PLC

The study showed the influence of a school principal’s support on the sustainability of PLCs in rural schools. In School B the school principal supported the PLC, but the school budget did not prioritise spending to sustain it. The teachers abandoned the PLC in School A because they received no support from the school principal, showing the need for principals “to create supportive conditions” and time (King, 2016) for a PLC. The principal has a number of key roles including influencing the direction of future PLCs and monitoring PLC practices (Wang, 2016; Yin & Zheng, 2018). They can provide release time or schedule time for teachers’ PLC meetings, minimise other external professional duties that require teachers to travel away from their school, and develop rewards and incentives for teachers’ professional learning efforts (Louis, Marks, & Kruse, 1996; Yuan & Zhang, 2016).

The teachers in School A were not supported to continue implementing the PLC due having inadequate resources and poor working conditions. This situation may have been different if school leadership had established a safe work environment and shaped a positive school culture and climate for professional learning (Ahn, 2017; MacNeil, Prater, & Busch, 2009; Wang, 2016; Yin & Zheng, 2018). As a TALIS study found, school leadership influences teachers' attitudes toward their job satisfaction, self-efficacy, professional collaboration and student achievement (García Torres, 2019). Importantly for the sustainability of the PLC in this study, teachers' perceptions of their school principal's capacity and trustworthiness influence the long-term implementation of change (Hallam et al., 2015).

School leadership has the power to encourage and sustain any educational reform in schools (Day, 2005a, 2005b; Lambert, 2007; Park & Jeong, 2013; Vanblaere & Devos, 2016; Wang, 2016; Zheng, Yin, Liu, & Ke, 2016) so that when a principal is supportive he/she boosts the willingness of teachers to be part of an innovation such as the PLC intervention. Changes from a new program like the one described in this investigation can be sustained if it is integrated into the school system by being part of the professional development program (Imants & Van der Wal, 2020). Teachers would need to be supported by being provided with basic teaching resources, moral encouragement, and a fair salary. A new appraisal system could be put in place that would encourage teachers' positive attitudes towards collaborative work in a PLC. The school principal's support influences teachers to continue to participate and implement activities planned in the PLC (Brodie, 2019). To promote the sustainability of the PLC innovation it is important that the structural conditions within a school enable teachers to take collaboration seriously (Yuan & Zhang, 2016).

It was noted that a year after the PLC intervention, teachers showed decreased commitment and motivation to continue implementing it; they

cited limited support from their school leaders as contributing to this. Teachers' commitment is important for PLC sustainability in rural schools; they need to continue to make the effort to translate what they have learned into their daily practice. Bowe (2016) studied Quality Teaching Rounds and found that teachers' commitment is essential for program uptake and sustainability.

Steven is a success story due to the way he was committed to the PLC and transferred his knowledge into his leadership in the school when he became a school principal. He implemented his new knowledge of working in a PLC and provided an opportunity for all teachers in the school to participate in a two-day intensive collaborative professional learning workshop where they designed lessons. This kind of positive transfer of knowledge to the wider school community has the potential to promote the sustainability of this innovation. He demonstrated his professional agency, which is "constructed, re-constructed, and realized in dynamic interactions between teachers and their working environments" (Pyhäntö et al., 2015, pp. 822-823), and his ability to facilitate school reform efforts (Imants & Van der Wal, 2020). As was found in a study in Vietnam, collaboration between teachers in remote areas can facilitate their agency for implementing new initiatives and policies because they are supported professionally in their efforts to enhance their teaching quality (Nguyen & Bui, 2016). Participation in a PLC can assist teachers to develop their professional agency (Brodie, 2019).

This study has shown that school leadership determines whether the PLC culture can be embedded in the culture of the school or whether it will disappear at the conclusion of a PLC program (Yin & Zheng, 2018) because the leadership influences school climate and its culture for sustaining an innovation such as a PLC.

6.6.3 Creating sustainable PLCs in rural schools in Indonesia

The context of any professional learning program needs to be considered to ensure the long-term effectiveness of its implementation (Bellei et al., 2020; Gu & Johansson, 2013; Guskey, 2009; Guskey, & Yoon, 2009; Hubers, 2020; Nawab, 2018) and this is particularly so in rural schools in eastern Indonesia. National policies need to be aligned with the educational reform involved in implementing a PLC to achieve its long-term sustainability.

This study has found that a lack of adequate infrastructure, such as limited facilities in school, no public transport being available, lack of electricity or internet access in the rural and remote areas in Indonesia (Djahimo, 2015; Febriana, Nurkamto, et al., 2018; The World Bank, 2019), hindered the sustainability of this innovation. Teachers find it difficult to sustain a PLC if there are insufficient funds in their schools to continue their professional learning collaboration (Olivier & Huffman, 2016).

This study has also found that being in Indonesia's collectivist society with high power distance, teachers found it difficult to provide critical feedback. Being in a communitarian culture (Etzioni, 1996, 2003; Hofstede, 2001, 2020; Lessem, 2001; Minnis, 1999) these Indonesian teachers showed that younger teachers recognised the seniority of elder teachers and were cautious about conveying any critical feedback to them in order to keep harmony within the school. The PLC intervention with the QTF facilitated teachers by giving them constructive feedback about the teaching of their colleagues and by encouraging them to share their knowledge within a structure that reduced the power distance between teachers (Gore et al., 2017; Gore & Rickards, 2020).

Secondly, the study found that teachers need to have regular on-going PLC meetings in their schools in order to sustain changes from the

educational initiative (Bolam et al., 2005; Harris et al., 2006; Louis et al., 1996; Marks & Louis, 1999; Stoll et al., 2006). Doing this would assist teachers to evaluate not only their PCK and practice, but also their beliefs and attitudes that underline their practice. The country's education department and school principals have the responsibility of ensuring that there are school level policies that provide regular and on-going support and incentives for teachers' professional collaboration in a PLC.

It has been shown that follow-up programs are crucial for the sustainability of a PLC. They are needed to provide the critical support that teachers need to continue their professional collaboration in a PLC (Askill-Williams, 2017; Bolam et al., 2005; Guskey, 2002; Guskey & Yoon, 2009; Hunzicker, 2011; Nawab, 2018). In conclusion, considering context, providing on-going and regular support and follow up programs are required for the sustainability of a PLC innovation in rural areas.

6.7 Summary

This chapter has reported the findings from Study 3 and has described the challenges to the sustainability of a PLC in rural schools in eastern Indonesia. Recommendations for the sustainability of the PLC made by teachers included the provision of on-going support from school leadership, and from mentors or facilitators. The next chapter of the thesis provides conclusions and recommendations from the three studies reported in this thesis.

CHAPTER 7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter presents the conclusions of this investigation that focused on exploring how a professional learning community (PLC) intervention influenced the pedagogical content knowledge (PCK) of Indonesian English as a Foreign Language (EFL) teachers, related to teaching to develop higher order thinking (HOT) in their rural students. The study was conducted in Bintang Regency in East Nusa Tenggara (ENT) Province, Indonesia. The data were collected using multiple methods including surveys, interviews, observations and document collection across the three studies reported in this thesis.

This chapter draws conclusions from the findings of the three studies that investigated: (1) the EFL teachers' state of professional learning, their PCK, beliefs and practices related to teaching HOT, and their PCK needs in rural schools in Indonesia; (2) the impact of a PLC on EFL teachers' PCK, their PCK beliefs related to promoting HOT in their students, and the use of the Quality Teaching Framework (QTF) and video-based reflection (VBR) within a PLC; (3) the sustainability of a PLC in rural schools in eastern Indonesia. It also describes the original contributions of the study to: (1) PCK research in Indonesia, (2) PLC interventions in rural eastern Indonesia, (3) studying QTF implementation in the Indonesian context, (4) studying instruction about HOT in eastern Indonesia, and (5) the study of VBR in Indonesia. It makes recommendations for educational policy makers, school leaders, teachers, and professional learning providers. Finally, it outlines the limitations of the study, highlights directions for future research and the implications of the investigation.

7.2 Conclusions from the findings of the study

The conclusions are presented in relation to the research questions developed for each study.

7.2.1 Study 1: EFL Teachers' PCK in rural areas in Indonesia

This section reports on the conclusions drawn from the findings of Study 1 related to the four research questions.

RQ 1. 1 What is the state of EFL teachers' professional learning in rural schools in eastern Indonesia?

The pre-intervention quality teaching survey found they had few opportunities for professional learning and spent little time collaborating with their colleagues. Teachers had limited opportunities to de-privatise their practice, to engage in collaborative activity and to participate in reflective dialogue that would advance their professional learning. Teachers had little regular scheduled meeting time to plan and prepare their lessons individually or collaboratively. The teachers expressed their willingness to enhance their teaching quality by engaging in professional learning activities, suggesting an openness to being involved in a PLC intervention.

RQ 1. 2 What is the state of PCK of EFL teachers in rural schools in eastern Indonesia?

It was found that the 52 EFL teachers in Bintang Regency, ENT province, had limited PCK. They indicated that they gave limited consideration in their teaching to many of the aspects described in the Quality Teaching Framework (QTF). Of particular interest for this study was the finding that they also gave little consideration to HOTS in their teaching. Before the PLC intervention, the five EFL teachers who were interested in participating in this professional learning opportunity showed limited understanding of the required EFL curriculum topics, did not elaborate on or connect topics with other subtopics, or make connections across the curriculum in a

meaningful way. Pre-intervention interview responses and inspection of lesson plans and classroom observations of these five teachers suggested that their EFL PCK-Curriculum knowledge (CurrK) was informed by the prescribed EFL curriculum textbook. Their PCK-EFL CurrK informed their PCK-EFL Content knowledge (CK) coverage. In addition, teachers had limited PCK related to teaching HOT in EFL lessons, little knowledge about HOT, and they rarely considered HOT learning goals and activities. Their practice was shaped by a teacher-centred approach to teaching and focused on lower order thinking (LOT). They had limited PCK-General pedagogical knowledge (GenPK) related to classroom management and organisation, and classroom observations showed they spent a good deal of classroom time managing students' behaviour, which impacted on the learning process.

RQ 1. 3 What are the beliefs, attitudes and practices of EFL teachers in relation to promoting HOT in rural schools in Indonesia?

Although over half of EFL teachers in the regency expressed a high sense of responsibility for their students' learning, they did not believe that many students were capable of learning HOT. The five EFL teachers who participated in the PLC expressed this belief that students were not able to learn HOT in EFL lessons and attributed this to their low English proficiency. These beliefs about students' limited abilities seemed to justify their decision to include LOT and omit HOT from their lessons. These EFL teachers did not have a sound knowledge or understanding of the concept of HOT and this impacted on their classroom practice related to teaching HOT. Teachers also described how being in rural schools restricted their ability to meet the objectives of the curriculum.

RQ 1. 4 What are the PCK needs of EFL teachers in rural schools in eastern Indonesia?

Study 1 identified several areas of teachers' PCK needs and these became the focus of the PLC intervention carried out in Study 2:

- (1) To develop a sound understanding of HOT concepts in the curriculum.
- (2) To prepare and develop lesson plans with teaching strategies that encourage critical and creative thinking through HOT instruction in EFL lessons as required by 2013 EFL curriculum.
- (3) To re-design or modify textbook activities or design learning activities to promote HOT and employ resources that are available in the local area of each school.
- (4) To provide teachers with opportunities to discuss teaching strategies and reflect on their teaching to promote meaningful communication in their classroom interactions.
- (5) To assist teachers to apply effective classroom management strategies and help students self-regulate their behaviour.
- (6) To develop detailed task criteria for the assessment of HOT in their lesson planning.
- (7) To explicitly consider and include their knowledge of learners and their backgrounds as a way of encouraging students' engagement in EFL learning.
- (8) To include activities in lessons that are relevant to students' local context and culture.

7.2.2 Study 2: The PLC approach to developing teachers' PCK and promoting HOT in EFL lessons in rural areas in Indonesia

This section reports the conclusions from Study 2 findings related to five research questions.

RQ 2. 1 Has the PLC intervention designed for this study influenced EFL teachers' PCK? If so, in what way?

The teachers' PCK was measured using the eighteen QTF elements (NSWDET, 2003) that represent various aspects of knowledge for teaching. Teachers were encouraged to use the QTF to consider different aspects of knowledge categories in their lesson planning, teaching,

observing lesson videos, coding and reflecting in their PLC collaboration. Assisting teachers to include HOT lesson objectives and goals in their lesson plans and teaching practices resulted in the development of their curriculum knowledge. Teachers in the two PLCs conducted showed they made explicit connections between their PCK-CK and PCK-CurrK. This development seems to have resulted from the suggestions made in their PLC collaboration and from feedback they received from their colleagues and PLC facilitator (researcher). It can be concluded that working in a PLC contributed positively to EFL teachers' PCK development.

Although teachers progressed in their knowledge of HOT concepts and started to recognise the importance of HOT in EFL lessons, they showed limited enactment of their HOT knowledge in their classrooms. They struggled to integrate HOT activities into their lessons. Before teachers can practise integrating HOT into their lesson planning and instruction, they need to develop their understanding of HOT concepts. It can be concluded that a PLC intervention using the QTF has the potential to encourage the growth of rural teachers' PCK related to teaching HOT. As shown in this investigation, teachers new to teaching HOT need a considerable amount of time to develop a mature understanding of the concept of HOT if they are to not only plan but also enact teaching to develop HOT.

The EFL teachers also progressed in their PCK-GenPK. During the PLC discussion, teachers reflected on the issue of corporal punishment, which was a step toward providing a safe learning environment for students in schools. They had not previously discussed this practice openly because of the Indonesian culture of maintaining harmony between teachers and saving teachers' face as part of its collectivist society. To start addressing this issue in the PLC was a big step for the teachers and shows the potential of a PLC for stimulating change at the local school level.

Teachers' PCK-KLLC and PCK-KECC progressed during the PLC intervention. The QTF was used to track the teachers' PCK growth and it revealed they were more able to include students' contextual and cultural knowledge into their lessons as their PCK increased. The PLC in which teachers observed videos of their teaching helped them see that their way of asking direct questions was not effective. Observations indicated that the teachers progressed in their knowledge of how to identify students' understanding of topics taught and ways to encourage their participation in lessons.

Classroom observations showed that participating teachers shifted their approaches from teacher-centred to student-centred during the PLC intervention where they used the QTF to guide their planning and reflection on lessons. Classroom observations and lesson plans showed teachers started to shift from a lecturing style to a more constructivist approach that focussed on facilitating students' learning and encouraging their active participation (e.g., using groups, hands-on activities, developing teaching resources). The result of quantitative data analysis showed there was a significant difference between teachers' PCK in pre-PLC lesson observation (T1/T2) and post-PLC intervention lesson observation (T5). All of these indicators lead to the conclusion that the PLC influenced EFL teachers' PCK and practice in a positive way.

RQ 2. 2 Has the PLC intervention designed for this study influenced EFL teachers' PCK related to their beliefs and attitudes about teaching HOT, and their beliefs about students' ability to learn HOT in rural schools? If so, how?

It was found that the five EFL teachers who participated in the PLC changed their beliefs, self-efficacy and attitudes related to their teaching. Initially, they had beliefs that their students were not capable of learning HOT. However, they changed these beliefs after the PLC in which they had collaboratively learned about HOT and planned how they would

implement it in their EFL lessons. It can be concluded that the PLC contributed to the development of teachers' views that their students could learn about HOT. Moreover, the EFL teachers participating in the PLC developed their self-efficacy related to their ability to teach HOT in EFL lessons, due to being supported in developing their PCK for effective teaching. The PLC gave teachers the opportunity to watch and review videos of their teaching which illuminated areas of their teaching practice that needed to be strengthened; PLC discussions assisted them to plan ways to do this.

The positive impact of the PLC collaboration encouraged teachers' positive attitudes towards their sense of responsibility for their students' learning. After the PLC, the teachers had changed their beliefs about teaching in that they not only taught to comply with curriculum requirements but were also making efforts to plan high quality lessons. PLC discussions contributed to teachers developing their awareness of alternative ways of managing the classroom and communicating with students. The collaboration assisted them to evaluate their teaching approach and supported them to switch from a teacher-centred to student-centred approach. The PLC encouraged teachers to share their knowledge with each other and one teacher became an agent of change in his school. Overall, the PLC intervention contributed to shifting teachers' beliefs about teaching and the capacity of their students to develop HOT, and this impacted on their classroom practice.

RQ 2. 3 Has the PLC intervention designed to improve EFL teachers' PCK influenced teachers' instruction to promote HOT? And if so, how/in what way?

The study found that being involved in this PLC helped teachers develop their PCK knowledge for teaching HOT in their EFL lessons. However, teachers' development of PCK and implementation in their practice varied. Most teachers found that designing lesson plans as part of their PLC

activities helped them include HOT activities in their lessons and all of the EFL teachers made progress in their basic knowledge of HOT. This is the first step in developing HOT because teachers and students have not engaged in these sorts of activities before, as observed in the pre-intervention lessons.

Moreover, giving teachers opportunities to collaborate in a PLC, to learn about HOT, observe, be observed and reflect on their teaching to see whether they achieved their HOT goals or not, could contribute to their awareness of steps they could take to develop students' HOT. The PLC played a positive role in assisting teachers to promote some degree of HOT. However, it was clear that teachers needed more time to develop deeper knowledge of HOT concepts and to practise their HOT teaching in their classroom context indicating that, while a PLC approach was valuable, a considerable amount of time needs to be allowed for teachers to develop new knowledge and teaching practices such as HOT. Teachers' involvement in the PLC helped them to recognise the significance of developing students' ability to analyse, evaluate and create in their EFL lessons; all skills that are required for 21st century learning.

RQ 2. 4 Does teaching of HOT influence rural students' use of HOT in EFL classes?

It was found that collaboration in a PLC encouraged EFL teachers to develop a basic knowledge of HOT so that they began planning activities that could encourage HOT. As noted earlier, they did not implement the creating activities planned, which suggests that they were not yet confident enough to implement these types of activities. It is important to remember that planning and implementing critical thinking was new to these teachers. Although they made some gains as a result of the PLC intervention, more time in professional learning would be needed to enable these teachers to teach in such a way as to develop students' HOT. This is an important finding because the government's new education policy requires teachers to develop students' HOT without any

mention of professional learning to enable them to do this. This investigation shows that it takes time to develop the ability to understand and teach for HOT.

RQ 2. 5 How useful is the QTF for structuring a professional learning intervention in the context of Indonesian schools in terms of promoting teachers' respectful communication and reflection on lesson planning and teaching?

The teachers said they valued the QTF as a way of not only evaluating their teaching but also as a structure for facilitating professional learning in their schools. They valued the QTF as a way of helping them share, discuss and reflect on their teaching during their PLC cycles. They appreciated being able to address various issues in their teaching respectfully with each other without feeling uneasy about doing this. The QTF facilitated respectful communication using professional language, aligning with cultural values in this rural area of Indonesia. Social support helped them address sensitive issues (i.e., corporal punishment), and the self-regulation element of the QTF facilitated their discussions. The QTF proved to be a useful structure for professional discussions and reflections within the PLC in the context of these Indonesian schools in rural areas, a very different context from the Australian context where it was developed.

RQ 2. 6 Is the use of video-based discussion for EFL teachers' critical reflection on their practice an effective approach in a PLC? If so, in what way?

The findings from the use of VBR during EFL teachers' collaboration in the PLC shows the affordances of this technology to facilitate EFL teachers' development of knowledge and teaching skills. It contributed to building the confidence of teachers in opening their classrooms for critical evaluation by their colleagues. The PLC encouraged teachers to de-privatise their practice due to them having the opportunity to observe and

be observed teaching; it allowed them to give and receive feedback and not feel embarrassed.

VBR encouraged teachers to evaluate their own teaching limitations and strengths by giving them the opportunity to discuss their teaching videos and improve their teaching. It provided them with opportunities to update their knowledge and skills through being able to learn from observing the teaching of their colleagues. Use of VBR enabled teachers to revise their teaching and thus improve the quality of their EFL lessons. Acknowledging that the use of video during reflection in a PLC should be handled with care so teachers feel they are in a safe environment, the development of a code of conduct at the beginning of the PLC collaboration proved to be a valuable part of the PLC process. It can be concluded that VBR was an effective approach for the PLC for stimulating teachers' critical reflection on their practice.

7.2.3 Study 3: The sustainability of a PLC approach for teachers' professional learning in rural areas in Indonesia

This section reports conclusions from Study 3 related to three research questions.

RQ 3. 1 How sustainable are any gains from a PLC intervention designed to strengthen EFL teachers' PCK and develop their HOT teaching practices in rural areas in Indonesia?

The teacher survey revealed that significant changes were not identified for the PLC intervention group for most of the variables measured in the survey pre-intervention and post-intervention twelve months later. However, there was a significant change in the **QTF dimension of quality learning environment** (with a medium effect size). Three of the teachers (Melinda, Steven and Ruben) progressed in their knowledge relating to the social support element in the Quality Learning Environment.

Although these teachers learned about HOT concepts in the PLC, they were at the beginning of developing their understanding of HOT and recognising that HOT should be included in their lessons and that students were capable of doing it. They had limited knowledge of HOT concepts (analysing, evaluating and creating) after the intervention, which could be related to this being a new concept for them.

Once they stopped their PLC collaboration, they struggled to translate HOT and other QTF elements into their daily practice. One year later, the teachers had gone back to their traditional teaching practices; they followed the textbook when they taught curriculum topics. Although they had become more familiar with the new syllabus of the 2013 revised EFL curriculum, they were not giving students opportunities to do hands on activities that might encourage development of HOT. They explained this by saying that they did not have supporting resources to design hands-on activities like they had in the PLC intervention. The PLC intervention related to developing HOT in EFL students was not sustained twelve months later. This finding suggests that teachers would benefit from continuing professional learning to develop their understanding of the concept of HOT so they are able to plan learning activities to develop HOT and have the self-efficacy needed to implement them.

RQ 3. 2 What are the challenges to sustaining the implementation of a PLC in rural schools in eastern Indonesia?

This investigation found that external and internal contextual challenges impacted on the sustainability of a PLC in two rural schools in eastern Indonesia. As has been explained, the Indonesian education system employs a predetermined 2013 curriculum, prescribed textbook and lesson plan format, and this poses a barrier to integrating HOT into EFL teaching and learning. The new EFL 2013 curriculum was intended to provide students with HOT learning experiences to prepare them to compete in the 21st century world by developing their critical, creative

thinking, and problem-solving skills. However, the predetermined format limits teachers' ability to simplify or modify lesson plans to their own design. Students are required to sit for a high-stakes national examination and, because of this, the teachers felt compelled to teach to the test to ensure that students would pass the national examination. This focus on 'teaching to the test' worked against sustaining the PLC across the year because teachers had no incentive to keep implementing the strategies they had tried in it. It can be concluded that in order to sustain an intervention like this one, Indonesian educational policy would need to change so that it supports the constructivist approach to active learning adopted in the PLC intervention.

Another challenge to the sustainability of the PLC came from cultural factors related to high-power distance within the culture. Teachers expressed concerns about providing feedback to other colleagues and were careful about doing this because of their cultural awareness of the nature of relationships between younger and older members in their school community. The QTF used in the PLC was able to bridge this cultural barrier because its framework and code of conduct provided a structure within which participants could give feedback to each other in a respectful way.

The support of school leadership is crucial for PLC sustainability and it was a challenge if this was not in place. Teachers needed strong support and to feel appreciated for their efforts to improve the quality of their teaching practices. Leadership also plays a role in maintaining a supportive school climate and school policies. School leadership can support teachers' professional learning by establishing school policies that allow release time for teachers to be involved in a PLC. This support would encourage teachers to commit to a PLC and establish collaboration as part of the school's culture. In addition, school leadership plays a role in creating a safe school climate for innovation and in providing appropriate supporting resources for teachers' teaching and professional learning. A PLC is not

likely to be sustained if EFL teachers in rural schools do not receive the support they need to do their jobs as teachers and to maintain their involvement in professional learning to develop their teaching practice.

RQ 3. 3 What recommendations can be made to promote the long-term sustainability of a PLC in rural schools in Indonesia?

Study 3 found that the PLCs in two rural schools were not sustained when various supporting conditions were not present. The four teachers in Study 3 made recommendations for the sustainability of a PLC including: school leadership support in terms of policies for regular PLC meetings and the creation of a collaborative school climate and culture for a PLC; and having follow up programs to ensure any gains from a PLC are maintained. Follow up programs could encourage teachers to continue the PLC and maintain their motivation for changing their teaching practices.

Other practical recommendations made by teachers included: communicating with teachers through mail services, mobile phone applications, and mentoring programs with regular visits from outside facilitators. Programs that encourage teachers' professional development could help narrow the achievement gap between students in this rural area of eastern Indonesia and students in more populated areas of the country. Promoting the sustainability of professional development initiatives, such as this one, should be a high priority for the government that wants to increase the quality of education in rural areas of Indonesia.

7.3 The researcher's reflection on working in rural schools

The researcher has learned that working in rural schools in eastern Indonesia poses some serious challenges. During data collection in the remote island of Bintang regency in ENT province, the researcher had firsthand experience of the struggles and hardships that teachers in this island face in their everyday lives. For example, for three months in the first year of the investigation and one month in the second year, the

researcher visited the schools by riding there on a motor bike as the only means of transport available in the island. Reaching the school sites to conduct the PLC intervention on a weekly basis was difficult and risky because the roads to the school sites are broken and uneven, especially during the rainy season when they are very muddy, slippery and unstable. These conditions make it dangerous for teachers to go to school. On one occasion, the researcher had a motor bike accident while travelling to one of the schools and suffered a fractured bone in the right shoulder. Teachers face these dangers on a daily basis when travelling to and from schools on this island. So, this circumstance has to be taken into consideration in terms of 'delivery' of professional learning to avoid teachers' additional 'trips' in this island.

The researcher also came to understand that living and working on this island can be very expensive for teachers. For example, the cost of fuel needed to travel to and from school was double or triple the government regulated price. Sometimes, teachers could not get access to fuel because it was out of stock, especially in the rainy season. The island depends on ships to bring in fuel but harsh weather stops ships from coming to the island; this contributes to raising fuel prices. Teachers were left with the choice of not going to school or paying the high fuel cost to get there and because of this the lessons were cancelled and the students missed their lessons. These conditions make life very hard for teachers who have a limited salary. PLC meeting times need to be flexible to accommodate conditions such as these. In addition, limited internet coverage and lack of electricity posed serious challenges for teachers on this island to access professional learning and shared resources electronically. In each school, some rooms did not have any power, which meant that careful consideration had to be given to rooms where the PLC would be held to ensure they had electricity.

In this particular research, being positioned as both insider and outsider assisted with the process of data collection and data analysis, because the

researcher had insights and awareness of some unwritten norms or ways of communicating with local teachers during the facilitation process that ensured participating teachers were able to engage fully in the PLC collaboration and to assist with facilitating the PLC in a culturally appropriate way. At the same time, having the outsider position as a researcher gave the researcher a chance to remain objective in the research process and allowed her to both understand the culture (as an insider) and remain objective (as an outsider) at the same time. For the teachers who participated in the PLC intervention, this was the first time they had received intensive support for their professional growth and the first time they had encountered central ideas in the PLC: the concept of HOT. The researcher regarded it as an honour to have the opportunity to support the teachers in the study during the PLC intervention in both schools.

7.4 Original contribution of the research

This section discusses the original contributions of this investigation that used the PLC approach to professional learning in rural eastern Indonesia related to: (1) the study of EFL teachers' Pedagogical Content Knowledge (PCK); (2) investigating the value of a Professional Learning Community (PLC) intervention and its sustainability; (3) employing the Quality Teaching Framework (QTF) in the Indonesian context; (4) the promotion of Higher Order Thinking (HOT) in EFL teaching; and (5) the use of Video-Based Reflection (VBR) as part of professional learning.

7.4.1 Contribution of the PLC to studying EFL teachers' PCK in rural eastern Indonesia

This investigation used a PLC approach to professional learning and that approach contributes to knowledge in the field of developing EFL teachers' PCK, which is important because PCK is the catalyst for effective teaching (Shulman, 1987, 2015). Exploring the impact of a PLC on EFL teachers' PCK in rural eastern Indonesia is noteworthy because most studies on

PCK development have been conducted in the curriculum areas of Science and Math education (e.g., Hayden & Eades Baird, 2018; Karim & Danaryanti, 2020; Neumann, Kind, & Harms, 2019), but there has been limited focus on how a PLC can contribute to EFL teachers' PCK development (Al-Jaro, Asmawi, & Hasim, 2017; Irvine-Niakaris & Kiely, 2015), particularly in Indonesia (Kultsum, 2017; Rahmani, 2018; Triastuti, 2014, 2017). Researching the development of PCK of EFL teachers in a rural area of Indonesia (the regency in ENT Province) has not been done before.

The investigation found a change in the beliefs, self-efficacy and attitudes of EFL teachers who participated in the PLC intervention to develop their PCK, but it is worrying to find that this did not necessarily translate into long-term enactment of the new teaching practices they had learnt. However, long-term changes in attitudes, beliefs and practices take time and need on-going professional learning support with regular opportunities for teachers to continue developing and implementing their PCK in their classrooms. The quality of support they receive within a PLC intervention impacts on the quality of their teaching and of students' learning. The PLC is a viable model for developing rural EFL teachers' PCK; its structure can help them plan, enact and reflect on their teaching.

7.4.2 Contribution to investigating the value of a PLC intervention and its sustainability in a rural area of eastern Indonesia

This investigation contributes to the field of teachers' professional learning in rural areas by investigating how a PLC approach contributed to developing EFL teachers' PCK in a rural area of eastern Indonesia.

Although the PLC is not a new type of professional learning, there has been limited study of its use in rural areas, such as in eastern Indonesia. The processes of a PLC collaboration were shown to contribute to developing teachers' capacity to change their teaching practice and begin to empower their school community.

This investigation contributes to a deeper understanding of the applicability of PLC practices in rural schools and helps in understanding the conditions needed to ensure sustainability of such an intervention in remote contexts. Hence, the findings of the three studies comprising this investigation add to knowledge of a PLC as a school reform initiative for improving teachers' professionalism in rural areas of eastern Indonesia. This investigation has shown that support, or lack of support, from school leaders influenced the sustainability of this professional learning initiative. It suggests that PLC interventions could be a way forward for teachers' professional learning in rural schools in eastern Indonesia and perhaps for rural schools in other parts of Indonesia and other countries as well.

7.4.3 Employing the QTF within a PLC in the Indonesian context

This investigation is the first to employ the QTF for the professional learning of Indonesian teachers. It documents the implementation of the QTF in a different educational context from the Australian context where it was developed (NSWDET, 2003). The QTF was able to be adapted and used to encourage teachers' knowledge-based growth, specifically their knowledge of PCK. This research offers a comprehensive understanding of how the QTF was employed to improve rural Indonesian EFL teachers' PCK and the quality of their teaching in general as well as their teaching of HOT in EFL in particular.

This research also shows how western educational concepts can be adapted to support teachers' professional learning in the Indonesian context. The concepts could not be directly implemented, e.g., in Australia teachers' PCK is based on constructivism which means they would be likely to develop their understanding of key concepts of the QTF quite quickly. In this investigation, the Indonesian teachers misunderstood some of the QTF concepts. The Indonesian teachers in this investigation needed more time and professional learning to develop a

deep understanding of the QTF concepts so they would feel confident enough to implement them effectively.

Moreover, using the QTF to guide the PLCs acted to narrow the cultural barriers so that senior and junior teachers were able to work collaboratively within the QTF structure; it reduced issues related to high-power distance relationships. In addition, the QTF structure assisted teachers to provide constructive feedback to their PLC colleagues despite their age or employment status. Developing a code of conduct as part of the PLC process proved to be an important step and this suggests that the QTF could provide a useful structure if it was used in other countries with similar cultural influences.

7.4.4 Contribution to promoting HOT in EFL teaching in rural eastern Indonesia

This investigation that employed a PLC contributes to the promotion of HOT in the EFL field in rural eastern Indonesia. It was possible to focus on instruction to develop HOT in EFL lessons, suggesting that a PLC could be used to improve the quality of teaching and learning in other rural schools in Indonesia. It has been found that even though HOT is an important skill leading to the ability to think critically and creatively (skills that are crucial for 21st century learners), most Indonesian teachers do not teach to develop it, leading to students only having opportunities to develop LOT in their learning (e.g., Chang et al., 2014; Jalal et al., 2009). This is the first research study in eastern Indonesia that has focused on helping teachers design EFL lessons with HOT objectives and learning goals within a PLC. The teachers' limited understanding of HOT shows that in order to encourage HOT in EFL classrooms, teachers need time to develop their understanding of HOT and to participate in HOT themselves. More attention could be devoted to this in future PLCs to ensure that teachers have the understanding they need to be able to plan and teach HOT. This study also contributes to understanding how HOT could be integrated in

TEFL/TESOL professional learning in other similar contexts beyond the Indonesia.

This investigation also makes a significant contribution to knowledge about the affordances of VBR for teachers' reflective practice within a PLC, where video technology is used to record and review teaching. Although many studies around the world have employed video for professional learning (e.g., Alles, Seidel, & Gröschner, 2019; Borko et al., 2017; Coles, 2013, 2019), and some studies have been conducted in western Indonesia (Ragatz et al., 2015; Ragatz, Sugiarti, & Iskandar, 2015; The World Bank, 2010), this is the first study in a rural area of eastern Indonesia, ENT province. Teachers were able to use VBR to reflect on their teaching quality and to enhance their professional learning. The use of VBR could contribute to narrowing the gap between education quality in rural contexts and the rest of Indonesia.

7.5 Recommendations for PLC sustainability

The following recommendations are based on the findings from this investigation that employed a PLC approach to teachers' professional learning.

7.5.1 Recommendations for the sustainability of teaching HOT and a PLC approach relevant to educational policy makers

The government and policy makers seem to presume that teachers have HOT and just need to implement it, which is not an accurate presumption. Experienced and novice teachers might have some vague knowledge or understanding of HOT but without having experienced HOT in their own education (or in teacher education), teaching it would not seem like a natural thing to do. They would need support to learn about and understand HOT before trying to plan lessons where they taught their EFL students about it. The researcher worked with teachers in a PLC across a school term but they made only small gains in their knowledge of HOT

and those gains did not last because they did not have a strong knowledge base or the support of the PLC once the intervention ended. This underlines the important point that support for teachers is needed when the government institutes a policy about teaching a concept such as HOT. This support is important for all teachers but due to the challenges facing teachers in rural areas it may be even more important for them. A PLC is a valuable way of ensuring teachers in rural areas are supported to implement educational priorities such as teaching HOT.

It seems that HOT teaching and learning in rural areas of Indonesia could be sustainable if national educational policy was coherent with the national curriculum and assessment system. The national examination has been 'a thorn in the flesh' of educational reform efforts. The results of the three studies in this investigation suggest that this thorn must be removed or modified in order to allow changes and reforms to take place. The national examination system does not allow teachers to freely prepare their students with the HOT skills they need to thrive in the 21st century, but rather encourages them to devote their teaching time to preparing students to pass the examination and graduate with the required scores. If teachers are to teach students how to think critically, the national examination system needs to be removed or changed so that teachers can spend time encouraging HOT.

Recently, the new Education Minister of Indonesia launched a freedom of learning program which includes a plan to replace the national examination system with a minimum competency assessment (literacy and numeracy) and character survey aligned with TIMSS and PISA (Kemendikbud, 2020). However, the Ministry of National Education and Culture must ensure it does not fall into the trap of changing the name of the test system without reforming the teaching and assessment system as well so that teachers can concentrate on promoting HOT.

Another recommendation emerging from the results of this study that employed a PLC approach to teachers' professional learning is related to lesson planning and the content of the EFL textbook. The studies revealed that some teachers had limited knowledge of how to design a lesson plan and so followed the prescribed textbook faithfully. The centrally mandated lesson plan design is very complex and it hindered teachers' ability to focus on the quality of the content of their lesson plan. Teachers planned more student-centred activities when they had opportunities in the PLC to focus on developing engaging lesson activities. Updating the content of the EFL textbook and including HOT activities would support teachers to continue implementing teaching and learning to develop HOT in their classrooms. This recommendation aligns with the new program proposed by the Minister of National Education, in which there is recognition of the need to simplify lesson plan formats so they consist of learning objectives, learning activities and assessment (Kemendikbud, 2020). This frees teachers to design their lesson plans but creates the need for them to be assisted to do this. A PLC approach could help them learn how to plan and implement lessons focused on HOT. The alignment of the new educational policy with PLC support could add to the sustainability of the PLC approach.

If the PLC approach is to be sustainable, resources and funds need to be provided, especially for poorly resourced schools in rural areas. The lack of infrastructure and educational resources in these schools was highlighted by teachers as being a barrier to the provision of quality learning experiences for students. This injustice must be addressed to achieve equity for rural education in Indonesia. To increase the sustainability of professional learning initiatives, such as the PLC, the Indonesian Government would need to allocate increased funding for educational resources and infrastructure in schools in rural areas of the country (especially in eastern Indonesia). By doing this the government would be fulfilling its duty to provide social justice for all Indonesian

people despite their geographic locations, as listed in *Pancasila*, the five principles of the foundations of the Republic of Indonesia (Presiden Republik Indonesia, 2009).

7.5.2 Recommendations for school leaders for the sustainability of a PLC approach to professional learning

To ensure the sustainability of the PLC approach to teachers' professional learning in rural schools, there needs to be active, supportive and facilitative school leadership. Without this support, any innovative program to improve teaching quality, such as a PLC, cannot be implemented and sustained. It is crucial to involve school leadership in a PLC to allow them to experience the possible changes and benefits to teaching and learning. There need to be school level policies that encourage teachers to continue their collaboration in a PLC, such as ensuring teachers have release time for professional learning activities. Furthermore, it is important to prepare teacher leaders or champions to be accountable and responsible for arranging PLC collaboration within their school community. This could enhance teachers' agency for bringing progress to their school (Harris, 2003). Such an approach could contribute to narrowing the gap in education quality between urban and rural schools in Indonesia.

7.5.3 Recommendations for teachers to enhance the sustainability of a PLC approach

This investigation found that teachers began to progress in their PCK for effective teaching when they had time to participate in a collaborative PLC as part of their professional learning. However, it was clear that teachers need to be committed to making time for their PLC involvement if it is to be sustainable.

This investigation revealed that personal factors posed barriers to teachers' professional learning efforts, and these barriers need to be addressed. Professional learning efforts in Indonesian schools must

include appraisal systems that reward or acknowledge teachers' efforts to improve themselves professionally. In terms of Indonesian culture, these rewards might relate to financial incentives or the possibility of career promotion in recognition of their commitment to professional learning. This support is particularly important for teachers in rural areas who have low wages and work as non-permanent or non-government civil servants. Recognising teachers' professional learning efforts despite their employment status would encourage teachers' active participation in their professional learning and contribute to the sustainability of a PLC innovation.

7.5.4 Recommendations to promote sustainability of a PLC in rural schools for professional learning providers

This investigation considered the effective features of a PLC for promoting teachers' professional learning. It is recommended that to support sustainability, professional learning providers consider follow up programs and local government policy when they design and implement a professional learning initiative. This intervention was very demanding for teachers (and the facilitator) because they were working on improving their PCK for HOT as they participated in a totally new approach to professional learning. It is recommended that future professional learning with teachers in rural areas like this could first focus on aspects such as PCK, then at other times focus on HOT, and then go on to focus on PCK for teaching HOT.

Any further PLC should consider and spend time developing teachers' understanding of HOT concepts before engaging them in learning about designing lessons that promote HOT. As part of developing their understanding of HOT, it is important to ensure that teachers have the opportunity to read articles about the concept of critical thinking and HOT so they can develop their understanding of the concept of critical thinking and the place of HOT within it. Teachers did not know about HOT before this investigation and it is clear now that they would have benefited from

spending time developing their understanding of it before planning lessons to develop it; any future professional learning should include this step.

Future PLCs focused on developing teachers' PCK for teaching HOT could employ the following framework with the following ten steps:

1. Teachers read about critical thinking and the place of HOT concepts within the lessons.
2. Teachers participate in workshops on HOT where ideas from their reading are discussed.
3. Teachers develop a code of conduct for respectful interactions in the PLC.
4. Teachers collaboratively plan and prepare lesson plans with a focus on HOT.
5. Teachers teach a lesson with HOT and are video recorded.
6. Teachers observe the lesson video and discuss it.
7. Teachers code the lesson video using the QTF.
8. Teachers reflect on the taught lesson.
9. Each teacher revises their lesson plan as a result of collaborative discussion and coding.
10. Each teacher teaches their revised lesson and reflects on its effectiveness.

The use of technology to sustain an innovation such as a PLC could provide a way forward for teachers in rural eastern Indonesia. They could be encouraged to use online video conferencing platforms such as Microsoft Teams, Zoom and WebEx to promote their collaboration. Above all, the Indonesian Government needs to ensure that the internet reaches rural and remote areas of Indonesia and that there are sufficient funds for rural schools so that teachers are able to pursue their professional learning through offline and online modes.

The government needs regency level policies on teachers' professional learning to make it sustainable. In the next 5-10 years, there might be rapid development in this remote island and the local government could prepare its teachers to embrace the advancement of technology by providing a program that prepares them to integrate video technology into their professional learning, as was done in the PLC intervention in this investigation. Indonesia consists of 17,000 islands with many of them being rural and remote; this could be a way forward for developing and supporting rural and remote teachers' professional growth. Thus, a government policy, with funding to support it, recommending the integration of video recording within a PLC for teachers' professional learning would benefit teachers and have a positive impact on education quality in remote islands like the one involved in the research reported here. This systemic approach to professional learning is needed to sustain an innovative PLC.

7.6 Limitations of the investigation

The present investigation involved only participants who expressed their interest in a PLC collaboration; this interest may have influenced any changes in teachers' PCK. It should be noted that the PLC intervention required a ten-week commitment from participating teachers and the PLC would not have been able to proceed if the participants were not able to make this commitment. Additionally, a small number of participants located in one rural regency in ENT province, Indonesia, were involved in two PLC interventions. Furthermore, the study could only employ purposive sampling to recruit participants; ideally a random sampling design could be included in the design of future studies so that a wider range of teachers, schools and teaching experience could be considered.

This investigation provides insights into issues involved in the implementation of PLCs in rural Indonesia, however, the results are not to be interpreted as applying to other settings. Although Desimone (2009)

has said that professional learning can be focussed on content and teaching strategies for teaching HOT, the recommendation is made here that further professional learning interventions with teachers who have little knowledge about HOT should first devote time to developing teachers' understanding of the concept of HOT before focusing on pedagogy to teach HOT. This would avoid the problem of teachers planning strategies to teach HOT without having developed their own knowledge and understanding of it; teaching strategies are not likely to be successful if teachers do not understand the basic concepts they are teaching (HOT).

Recognising that teachers' PCK development evolves over time within a PLC collaboration, it is recommended that it would be beneficial to conduct longitudinal studies in future research. For example, it would be ideal if the PLC intervention could be conducted for the whole academic year so that changes in teachers' PCK could be measured across a year. The current study was limited to the use of one video camera to record each teacher's teaching practice; more video recording equipment would need to be available if a number of teachers were participating in a PLC. Students' work samples were included in the data, but their voices were not; future research could prioritise talking with students to gain their perspectives on their EFL learning. It was difficult to determine students' development of HOT in their EFL learning after they were involved in a small number of lessons (3); a longer time is needed to develop HOT. These limitations could be addressed in future studies.

7.7 Implications of this research

This section outlines the implications of this research for researchers and for future research, teachers or practitioners, school leadership and policy makers.

7.7.1 Implications for future research

This research has implications for research into EFL teachers' PCK development, the study of PLC interventions, promoting HOT in EFL lessons, the implementation of the QTF and VBR for EFL teachers' reflective practice not only for those teachers in rural areas of Indonesia, but also for teachers in other parts of the country and in countries with similar cultural contexts. Further research could be carried out to compare how a PLC collaboration impacts EFL teachers' PCK in urban as compared to rural contexts in Indonesia. Future studies could employ a pre- and post-test design with large sample sizes and a control group in order to identify changes in teachers' PCK. There could be comparisons of the impact of a PLC on EFL teachers' PCK in different parts of Indonesia. Future research could be done to employ the PLC intervention approach for multidisciplinary teachers' professional learning in Indonesia in rural and urban schools across the country.

Future research could explore EFL teachers' participation in a PLC that focuses on promoting critical and creative thinking through HOT in EFL lessons in other rural areas in Indonesia and compare the findings with similar approaches in urban areas in Indonesia. This would shine a light onto the effectiveness of PLCs for promoting HOT in the EFL field to prepare students with 21st century learning skills. Future research could be carried out to compare how the QTF may facilitate teachers' collaboration in a PLC in urban and rural schools in eastern Indonesia. A comparative study also could be carried out employing the QTF in Indonesian and Australian schools to identify how the QTF might facilitate teachers' PCK growth in different cultural contexts.

Future research could investigate the use of VBR with large numbers of EFL in-service teachers in different rural or remote areas in Indonesia. It may be possible to use VBR for not only EFL in-service teachers but also EFL pre-service teacher education in Indonesia. In this way, pre-service teachers would be able to use VBR to develop their future teaching

practice. Moreover, the use of multiple video cameras for recording classroom teaching and learning processes might be beneficial for getting a more comprehensive view of classroom interactions. This could contribute to a more comprehensive analysis and reflection on classroom teaching and learning.

7.7.2 Implications of a PLC for teachers or practitioners

This research has implications for using a PLC to support teachers' PCK growth related to teaching HOTS in the Indonesian EFL context. A PLC approach could be used in the reform efforts to improve teaching quality in rural Indonesia. As was done in this research, the QTF could provide a structure for teachers' collaboration as they design lesson plans and video record their teaching then code and reflect on their teaching videos.

It has been shown that it is worthwhile to ensure that any PLC has features such as: collective participation, de-privatised practice, and involving participants in active and reflective practice. With the availability of resources in rural schools in Indonesia varying, schools may need to be provided with video cameras for teachers to use as part of their professional learning. Consideration of this important aspect of having resources available is important because it impacts the effectiveness of a PLC collaboration and ultimately its sustainability.

Another implication related to teachers and practitioners is the potential of a PLC collaboration to reshape professional learning culture within school communities. The PLC approach could be used by teachers in different curriculum areas where there could be an emphasis on teachers sharing their new knowledge with teachers in different curriculum areas in their school community. Such an approach could encourage teachers to act as agents of change for professional learning in their schools and promote the sustainability of improvements in teaching and learning.

7.7.3 Implications of a PLC for school leaders

This investigation has shown that the role of school leaders is significant in the implementation and sustainability of a PLC collaboration. This has implications for the way school leaders might support teachers' efforts to implement and sustain a PLC approach in schools. They would be obligated to provide facilitative leadership that would allow a PLC to flourish as an important part of a school's professional learning culture. The structural conditions present in schools can act to encourage a PLC collaboration as central to its professional learning culture. For example, school leaders could provide professional learning release time and acknowledge teachers' efforts in the PLC collaboration. Doing this would motivate teachers because they would know that their efforts were being recognised by the school leaders. Structural condition of schools could be organised to support the sustainability of PLC collaborations so that time would be scheduled for PLC meetings, teachers' roles would be defined, and appraisal systems would be adjusted to take into account teachers' participation in PLCs.

7.7.4 Implications of a PLC for policy makers

Presently, the teachers' support group (MGMP) cannot cater for teachers' professional learning needs in Indonesia, so this research has many implications for ways teachers' professional learning could be promoted. Collaboration via a PLC could be considered as a way of supporting school reform efforts in Indonesia and may contribute to efforts to narrow the education quality gap between rural and urban areas in Indonesia. Thus, policy makers could invest in this type of educational initiative as a way to bring change to the education system in Indonesia.

7.8 Summary

This investigation provides a significant contribution to current and future research on EFL teachers' PCK development and the viability and sustainability of PLC interventions in rural areas of Indonesia.

The investigation has shown for the first time that a PLC intervention could be employed to support the development of PCK in EFL teachers in rural eastern Indonesia. Taking such an approach can lead to an improvement in the quality of teaching and learning in rural eastern Indonesia. The investigation revealed that external and internal contextual barriers need to be addressed to ensure the sustainability of this educational innovation that employed a PLC structured by the QTF to help teachers develop their PCK for teaching HOTS. Giving rural EFL teachers the support they need will ensure that their students have the opportunity to engage in high quality learning and could lead to a reduction in the education gap between regencies and urban and rural areas in Indonesia.

One way to close the achievement gap between Indonesian students and students from other countries is to improve teaching quality. There is consensus in education that quality teaching contributes to quality learning, and students who experience low quality teaching have lower achievement (Desimone & Long, 2010). The quality of teaching is influenced by the quality of professional learning in which teachers participate, and efforts to improve teaching quality are essential to improve students' learning outcomes. This research is relevant to government efforts to improve teachers' knowledge and teaching quality and contributes to new understandings of the value of implementing professional learning interventions in the Indonesian rural context where access to professional learning is currently limited. Overall, the findings of this research could support educational reform efforts in Indonesia in general and assist efforts to improve the quality of EFL and other teaching and learning in rural Indonesia in particular.

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