Understanding Indonesian Teachers' Beliefs About and Practice of Cooperative Learning Through an Ecological Model: A Multiple Case Study

Sari Karmina

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Abstract

Previous research has revealed a strong Indonesian tradition of teacher-directed instruction and rote learning that limit the use of constructivist approaches such as cooperative learning (CL). Moreover, Indonesian teachers' beliefs have been influenced by a conservative conception of a teacher as a person who is to be listened to, modelled, and followed. The teacher's position in Indonesia seems to contradict constructivist perspectives underlying CL, that is, knowledge begins with the students themselves and within the environment or group. Nevertheless, CL has the potential to be implemented in Indonesia as Indonesia's core values *gotong royong* (mutual assistance) and *musyawarah* (consensus decision making) align with CL elements such as positive interdependence, individual accountability and face-to-face interaction. Thus, this current study aimed to understand and interpret teachers' beliefs and practice of CL in the context of Indonesia, where the cultural values align CL elements, but its historical conceptions of the role of teachers and good teaching impede the implementation of CL. The study was situated in an interpretative-qualitative methodology using a multiple case study approach. Two phases were conducted. Phase 1 aimed at understanding the teachers' beliefs about CL, while Phase 2 aimed at investigating how the teachers implemented CL and whether the teachers' beliefs about CL were congruent with their practice. The findings show that the relationship between teachers' beliefs and practice in relation to CL is contextually unique and complex, influenced by their personal beliefs, and shaped by their relationships within their complex environments. The ecological model is used to understand the complexity of the teachers' beliefs and practice and the interactions that they experience within the ecological systems. The study provides significant contributions to the understanding of teachers' beliefs and the implementation of CL in the Indonesian context and offers a context-sensitive ecological model that aids understanding of teachers' beliefs about and practice of CL.

Dedication

For all teachers who believe in Cooperative Learning

Acknowledgements

Little did I know when I started my doctoral programme what a journey awaited me. It has been challenging in so many ways, yet also enjoyable because I always love the learning that results. This journey has stretched me so much and has allowed me to think of creative ways to juggle family, study, and work. I could not have done it without the support and prayers of many people in my life. My faith has been able to keep me grounded and has given me strength to persevere and for that, I thank Allah Subhanahu Wa Ta'ala from whom all blessings flow.

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Chapter One: Introduction

My Story, My Beliefs

This doctoral journey started with my dream, as young girl, of experiencing engaging and joyful learning, as my schooling years were boring and unpleasant. I remember that by the end of school time, I always had an aching hand because I had to write everything that my teachers said or copy what they wrote on the blackboard or do exercises in the workbook. Around the early 1980s, I thought my dream would finally come true when my fourth-grade teacher told me that we would have a *Cara Belajar Siswa Aktif* (student active learning) or CBSA programme, a new pedagogy aiming to change the role of children from passive to active participants in their learning. Unfortunately, like many education initiatives, the policy change did not immediately change years of teachers' practice. My remaining years of education were not full of student-centred, active learning experiences.

My dissatisfaction with the education system motivated me to become a teacher myself with the hope of breaking the tradition of teacher domination. Thus, after graduating from senior secondary school, I enrolled in a 4-year teacher training degree majoring in English education for foreign language learners. I was educated to teach English as a foreign language for elementary to senior secondary school students. I was taught by English native speakers who brought different approaches to teaching English as a foreign language using communicative approach. These lecturers used games in teaching which involved the whole class and required the class to work in groups for a project. These experiences were my first encounters of engaging learning.

In early 2000, as a novice teacher, I was introduced by a friend to the cooperative learning (CL) approach which fitted my pedagogical philosophy that learning experiences should engage students in challenging, thought-provoking ideas, emphasising multiple

sources of knowledge and that learning should be collaborative. I believe that students are capable of constructing their own knowledge through interactions with their peers. I believe that knowledge is socially constructed. The concept of CL working together to achieve a common goal (D. W. Johnson, Johnson, & Stanne, 2000), resonates with the values that I hold on to. I grew up in Central Java, Indonesia, in a society that is culturally oriented towards collectivism rather than individualism (see Hofstede & Hofstede, 2005). Some of Indonesian core values such as *gotong royong* (mutual assistance or cooperativeness) and *musyawarah* (consensus decision making; Darmaputera, 1988; Koentjaraningrat, 1978; Magnis-Suseno, 1997) are aligned with CL elements such as positive interdependence, individual accountability, and positive interactions (Demitra, Sarjoko, & Uda, 2012; Noel, Shoemake, & Hale, 2006).

In 2009, with my beliefs and motivation fuelled by the discovery of CL, I embarked on a master's thesis exploring how CL structures (teaching techniques that equip teachers to construct CL experiences for students; S. Kagan & Kagan, 2009) improve students' interactions in language class. However, with restricted access to CL books and seminal CL journals in Indonesia, my master's thesis relied on a few CL books and international papers, thus limiting the depth of the findings and the discussion. Still unsatisfied with my growing understanding of CL and motivated to explore further, I applied for a scholarship from the Indonesian government to complete a PhD. Upon embarking on my PhD at the University of Auckland, I was overwhelmed to work with a supervisor who challenged my understanding of CL by introducing different theoretical perspectives that underpin CL such as social interdependence, cognitive-developmental, social-cognitive, and behavioural theories (D. W. Johnson & Johnson, 2015).

Gaining unlimited access to educational journals and seminal and cutting-edge CL work from around the world broadened my knowledge about CL and increased my

understanding of Indonesian education. Through this journey, I also developed my interest in studying Indonesian teachers. I began to ask myself why my teachers did not implement CBSA? What prevented them from using it? I was intrigued by Bjork's (2013) findings that described the teachers' understanding of active learning. Bjork (2013) stated:

> In describing their actions, the teachers told me that they believed they were encouraging their students to take an active role in their studies; but their definitions of what constituted active learning were telling. The three examples of active learning they most often supplied were using workbooks in class; requiring students to complete more review exercises; and assigning homework more regularly. (pp. 53–54)

In the 4 decades since CBSA was introduced in Indonesia, despite curricula revisions every 10 years since the early 1980s to make learning more engaging to students, there has not been much change in teachers' practice (Bjork, 2013). It has been suggested, however, that any attempts to change the teaching approach should first consider how and what beliefs influence teachers in interpreting and implementing new pedagogical approaches (Fives & Buehl, 2012).

Many factors influence teachers' decisions and practices such as teachers' pedagogical and content knowledge, curriculum in use, teachers' goals and a broad range of other social and contextual factors. However, research has suggested that beliefs are one of the most significant forces that define teaching practices (Richardson, 1996). Beliefs shape decisions teachers make about what knowledge is relevant, what teaching routines are appropriate, what goals they would like to achieve, and which features of the social contexts of the classroom are most important (Richardson, 1996). Influenced by my own experiences as a student and a teacher who believed in constructivism, I formed beliefs about effective teaching and how students learn. Reflecting on my own beliefs, I am interested in studying

Indonesian teachers' beliefs about CL, how their experiences in teaching and learning influence them in using CL, and what experiences influenced their beliefs about and the practice of CL. In an attempt to explore and understand my initial observations in detail, I utilised Bronfenbrenner's (1979) ecological model because the framework honours the complexity of Indonesian teachers' beliefs and practice regarding CL. The framework serves as a powerful tool for illuminating the intricate web of factors influencing teachers' beliefs. It provides a coherent understanding of the complex environment and the interactions among the systems in which teachers interact.

Rationale and Purpose of the Study

In response to the pressure of globalisation and the need for modernisation, Indonesia is rapidly reforming its educational system (Ministry of Education and Culture [MoEC], 2013c). Attempts to make learning more relevant to the needs of students have taken place with changes in national curricula approximately every 10 years (Bjork, 2013; Weston, 2008). A constructivist approach has been recommended as an alternative to direct instruction (MoEC, 2013c). Among constructivist educational premises and practices, CL, a learner-centred approach, which developed in the United States of America in the 1970s, has been espoused as one of the most widespread and successful pedagogies (D. W. Johnson & Johnson, 2009; Sharan, 2010). Hundreds of evidence-based research studies have demonstrated that CL can provide students with opportunities to learn, work independently and in groups, and take greater responsibility for their learning and improve student outcomes (D. W. Johnson & Johnson, 2009). In addition to improved learning, previous studies of CL have also shown that CL has offered many social advantages for students such as positive relationships between students, social support, improved psychological health and self-esteem, developing higher order thinking and improved oral language proficiency (Cohen & Lotan, 2014).

In the context of Indonesia, CL should potentially be suitable for implementation due to its alignment with many Indonesian cultural values. The notion of learning together, teaching, and sharing with one another is attractive and promising, not only because of the potential for higher achievement proven in prior research, but also because of its potential for cultural aptness (Demitra et al., 2012). However, the implementation of CL in the Indonesian context also clashes with the prevalent teacher-directed approaches to teaching dominated by rote learning in most primary and junior secondary schools; classrooms in Indonesia remain traditional. Seputro (1999) described that the Indonesian teacher in his study believed that students ought to be active and independent in their learning and his role in teaching was as facilitator; however, his beliefs were not aligned with his practice, that is, his actions reflected his dominant role as a model, thus teaching was mainly one way. Seputro (1999) reported that the teacher's beliefs were influenced by Indonesian conservative teachers' role as people who are to be listened to, modelled, and followed. Another study by Bjork (2013) reported that the 100 junior secondary school teachers participating in his study answered "often" and "always" when asked whether they used student-centred teaching methods; however, his observation revealed that 53 % of the respondents used lecturing, 20 % involved hands-on activities and only 5 % included a class discussion. The two studies show that it is essential to study teachers' beliefs regarding CL in the context of Indonesia, as the prevalent pedagogical approach in the country has been teacher-centred nature and it is important to foreground that in Indonesia's culture, historical values appear to support cooperation and therefore match the tenets of CL. However, little research on teachers' beliefs in Indonesia has been reported and the few extant studies do not investigate teachers' beliefs about CL. Thus, the purpose of the study is to explore and understand Indonesian teachers' beliefs and practice regarding CL.

Research Questions

This current study addresses two main research questions:

1. What are Indonesian teachers' beliefs regarding CL?
    - To what extent do the Indonesian values gotong royong and musyawarah influence teachers' beliefs?
2. How do Indonesian teachers practise their beliefs about CL in their classroom?
    - To what extent are teachers' beliefs about CL congruent with their practice?

Two phases were conducted to answer each main question. Phase 1 of the study investigates teachers' beliefs about CL. Evidence was gathered from interviews with teacher participants. Phase 2 investigates how teachers implemented CL. Multiple forms of data were gathered to answer the second research question.

Theoretical Framework

A theoretical framework guides and directs researchers through the process of the study (Creswell, 2013). Creswell (2013) suggested that researchers approach the study with the most appropriate theoretical perspective to collect data, examine information, and interpret findings. Creswell (2013) stated that a qualitative approach is used to investigate how people experience the world and how they make sense of it. This current study is situated in a qualitative interpretative approach using a case study to investigate teachers' beliefs about and practice of CL. The qualitative approach is used because it enabled me to explore and understand the teachers' world through their beliefs, and how they practise their beliefs. I attempted to enter the teachers' worlds through interpreting their language and action (see Schwandt, 1994). Detailed descriptions of the interpretative approach, along with the ontological and epistemological perspectives that underpin this current qualitative case study design, are presented in Chapter 3 of this thesis.

I ground my work theoretically in ecological system theory (Bronfenbrenner, 1979) as the theory honoured the complexity of my participants' beliefs about CL in their own unique contexts. To address the complexity of the current context, Bronfenbrenner's (1979) theory enabled me to see the interactions among the systems in the environment and thus increase my understanding of the teachers' beliefs about CL (see Bronfenbrenner, 1979). A detailed explanation of the ecological system theory and the use of ecological theory in the study of teachers' beliefs and practice is presented in Chapter 2.

Macro Context

Historical-context influences on Indonesian education. To understand Indonesian teachers' beliefs about teaching and learning, it is important to know the historical contexts influencing their beliefs. Beginning in the 5th century, amid the Hindu and Buddhist kingdoms in Java and Sumatra, trade relations with India and China saw not only Buddhist and Hindu religions but also the dissemination of their educational thoughts and practices introduced to Indonesia (Bjork, 2005). In the large temple complexes and religious centres, usually located on the slopes of mountains, small settlements called *asrama* (boarding) were built. The asrama were inhabited by a guru or *resi* (religious teacher), his family and his *cantrik* (students). At that time, a type of formal education evolved for upper-class boys, including princes and sons of the nobility, that was designed to develop moral character through the study of the sacred books, customs, etiquette, and fine and martial arts (Koentjaraningrat, 1978). Koentjaraningrat (1978) clarified that the regular strategy for teaching was a private instructional arrangement under the direction of a guru, and the instructional strategy was didactic lectures focusing on memorisation.

The influence of Hinduism and Buddhism on education in Indonesia today is marked by particular values such as *hormat* (respect) and *alus* (being civilised; Koentjaraningrat, 1978; Magnis-Suseno, 1997). This type of education incorporated legitimate language use,

body movement, and gestures considered polite. The essential function of these values was the support of social harmony, which was critical for common participation and the individual's survival in the group (Hofstede & Hofstede, 2005).

The establishment of the Malaccan Sultanate in Malaysia in1406 became the centre for the spread of Islam in Malaysia and its neighbouring islands such as Sumatra, Indonesia (Wilkinson, 1935). By the end of the 16th century, Islam was the dominant religion across Indonesia (Peacock, 1973). The teaching of Islam, including recitation of *Al-qur'an* (The Koran) and prayer, occurred in a *Kyai* (cleric)'s house or *surau* (village mosque). Then, the more formal Hindu-Buddhist asrama was adapted and became the *pondok pesantren* (Islamic boarding; Orr, Billah, & Lazarusli, 1977). Pesantren was the first system of mass education that was designed to teach literacy and the doctrine of Islam (Peacock, 1973). Teaching was by didactic lectures, either to groups or to individuals. Emphasis was placed on rote learning and on correctness of verbal pronunciation (Orr et al., 1977).

Another form of religious education was introduced in the early 16th century, when the Portuguese merchants came to the Maluku islands and monopolised trade (Peacock, 1973). This was the first introduction of Western education in Indonesia (Bjork, 2005). Although the primary purpose of Portuguese ventures into Indonesia was trade, they brought Catholic priests who quickly established Catholic religious schools. In addition to teaching the locals the Catholic religion, the priests taught them reading, writing, and mathematics (Djojonegoro, 1997).

Education in Indonesia changed again when the Dutch traders arrived at the end of the 16th century (Djojonegoro, 1997). Just like the Portuguese, the Dutch initially came to Indonesia for trade but gained control over the country. Under the Dutch occupation, two social classes were established: *priyayi* (high society) comprised white-collar workers and Indonesian civil servants working in support of the colonial administration; labourers and

servants constituted the lower class (Koentjaraningrat, 1978). A small number of the priyayi children were allowed to attend primary schools that served the Dutch families. In 1848, a second type of primary school was established to educate the children of *pribumi* (native Indonesians) to work as administrators in the colonial offices (Bjork, 2005). In 1907, a third type of school, a Western-style elementary school, was established to accommodate the general population. The number of schools increased but many Indonesians thought that the schools introduced by the Dutch "lacked the ultimate significance and meaning of the pesantren" (Peacock, 1973, p. 62).

The Dutch had fallen to Germany in 1940 and were defeated by the Japanese force in Indonesia in 1942. Education in Indonesia amid the 3-and-a-half years of Japanese occupation, from 1942 to 1945, focused on two primary goals, eradicating the Western legacy and grounding influence for Eastern wealth. The schools were organised to support the Japanese war and the goal of creating a "greater East Asia co-prosperity sphere" which was the term used by Japanese to control the occupied countries during World War II (Bjork, 2005). With these changes, education suffered difficulties. The number of schools decreased by 30 % during Japanese occupation (Djojonegoro, 1997). However, there were some positive changes for the native Indonesian citizens in education during the Japanese occupation such as removing the specific racial or social classification required to enter schools and the reintroduction of the Bahasa Indonesia language as the medium of instruction (Djojonegoro, 1997).

The Japanese changed the names of the schools and higher institutions. They also brought war propaganda into the curriculum such as school assemblies with the flag ceremony and marching exercises in which the students were required to raise the Japanese flags and salute the Japanese Emperor each morning, and war songs (Djojonegoro, 1997). Eighty years later, the flag ceremony remains as a school ritual. Bjork (2005) reported that

the flag ceremony occupied a central position in Indonesia school life that indicates the heavy emphasis placed on school as a channel of the nation's culture and values.

The rote learning and the hierarchical position of guru and students from Hinduism, Buddhism, and Islam, the Western teachings from Portuguese and Dutch colonialism, and the Eastern teachings that the Japanese introduced have all influenced the learning and teaching in Indonesian educational institutions (Bjork, 2005, 2013).

Instructional shift. Efforts to alter the way Indonesian teachers instruct students commenced in the 1980s when the government introduced a teaching-learning approach called CBSA or Cara Belajar Siswa Aktif (student active learning strategy). CBSA required teachers to facilitate students' learning through active learning and cooperative activities (Zuhdi, 2015). Heyward and Sopantini (2013) claimed that the international donors contributed to the effort to reform pedagogy. CBSA was firstly called Active Learning Through Professional Support, a nationwide professional programme that was initiated by University of London and the Indonesian MoEC. Soon after, CBSA was integrated into the 1984 Curriculum. In the subsequent 35 years, active learning and cooperative activities have continued to be promoted in the curriculum.

In 1994, a new curriculum applied a meaning-based approach and communicative approach; thus, a student-centred approach was emphasised. The CBSA approach was replaced by PAIKEM, an acronym for Pembelajaran Aktif, Inovatif, Kreatif, Efektif, dan Menyenangkan (active, innovative, creative, effective, and joyful learning; Zuhdi, 2015). Funding for these curriculum changes and nationwide teacher training programmes to train teachers in PAIKEM was once again provided by international donors (Heyward & Sopantini, 2013). PAIKEM introduced several student-centred approaches such as contextual teaching and learning, problem-based learning, and CL (Mulyatiningsih, 2010). Contextual teaching and learning make learning meaningful for students by connecting the content

knowledge to the students' activities in real life, and to vocational contexts to which the students can relate (E. B. Johnson, 2002). Problem-based learning is a teaching approach using problems as the stimulus and focus for students' activity (Boud & Feletti, 1997).

In parallel with the effort to further implement active learning approaches in Indonesian classrooms, the 1994 Curriculum was replaced by the 2004 Curriculum. The government introduced a competence-based curriculum, which emphasised several competencies that would be mastered by school graduates. The curriculum focused on students' competency to develop their own learning as individuals and as a group. Learning was defined as happening when students build meaning and understanding, while teaching was defined as the responsibility of teachers to create situations supportive to students' creativity, motivation, and responsibility for life-long education (Department of National Education, 2003). Soon after, in 2006, the competence-based curriculum was discontinued due to the decentralisation in education, and the concept of a school-based curriculum was introduced. In the school-based curriculum, schools were expected to design their own curriculum within the framework of national standards. Teachers were given responsibility to design syllabi that would provide students with student-centred activities (Raihani, 2007). A study conducted by Heyward and Sopantini (2013), however, showed that schools were neither prepared, nor motivated to develop their own curricula and teachers continued to rely on standardised books to prepare the students to pass the national examinations. Not surprisingly, studies found that there was non-alignment between the objectives of the curricula and classroom practice; a didactic approach in which a teacher transmits content to students with the expectation that they will simply learn it, continued to form the majority of teaching and learning in the classroom (Bjork, 2005; Utomo, 2005; Weston, 2008).

As a response to this research, the MoEC promoted a scientific approach to the learning process in the current 2013 Curriculum that was designed to improve the

implementation of student-centred teaching strategies. The scientific approach is an instructional strategy in teaching subject matter. It is widely known in Indonesia as the five (*lima*) M approach, as it applies five steps: 1) *Mengamati* (observing), 2) *Menanya* (asking questions), 3) *Mengumpulkan informasi* (gathering information), 4) *Menalar* (reasoning or analysing data), and 5) *Mengomunikasikan* (communicating). Some schools may add two more M: 6) *Mencipta* (creating), and 7) *Membuat jejaraing* (networking) (MoEC, 2014). The MoEC suggested that, in the process of 5M, teachers incorporate the steps into student-centred approaches such as CL and problem-based learning (MoEC, 2014). In one study that explored the implementation of the 2013 curriculum for science, Suyanto (2017) reported that the teachers did not properly implement the 5M approach, for example, they skipped the observation step which is an important step for students to observe an interesting phenomenon so that they are motivated to learn. Suyanto (2017) concluded that the teachers were resistant to change; they preferred lecturing to student-centred approaches to teaching science.

Teacher education. Teacher training in Indonesia occurs through both preservice and in-service activities, as it does in most countries. Preservice takes place mainly through two major options: teacher training colleges, which offer diplomas and undergraduate degrees in teaching, and universities. Indonesia has 268 teacher training colleges that offer the S1 (undergraduate) degrees (Chang et al., 2014). Indonesia has at least one public training college in each province that offers a diploma (D1 or D2), and S1 degree to teachers. Universities, the second option, also participate in teacher preparation through their education departments and the degree attained by students is also an S1 degree. This degree satisfies one of the prerequisites for teacher certification and the graduates are awarded a higher salary under the Teacher and Lecturer Law of 2005 (Pemerintah Pusat [Central Government],

2005). All higher education institutions that produce teachers are collectively called LPTK or *lembaga pendidikan tenaga kependidikan* (institutes of teachers' education).

The delivery of in-service teacher training for teachers in basic education (primary and lower secondary) and higher secondary education is overseen by P4TK or Pusat Pengembangan dan Pemberdayaan Pendidik dan Tenaga Kependidikan (The Centre of Teacher and Education Personnel Quality Improvement) and LPMP or Lembaga Penjamin Mutu Pendidikan (Education Quality Assurance Council). P4TK is assigned to: 1) develop programmes that empower teachers and education personnel, 2) improve the competence of teachers and education personnel, 3) evaluate the programme and assess teachers and education personnel (Winingsih, 2013). There are 12 P4TKs throughout Indonesia, located mainly in Java, with each one comprising a national office of specialised subject-matter expertise where selected teachers are trained to disseminate content to other teachers in their provinces or districts. Thirty-three LPMPs, one in each of the 33 provinces, are responsible for provincial in-service teacher training: LPMPs are expected to have a task to 1) map, develop, and manage the quality of basic and secondary education; 2) supervise basic and secondary education in achieving national education standards; and 3) facilitate educational resources for basic and secondary education (Winingsih, 2013).

The KKG or *Kelompok Kerja Guru* (teacher working group) and the MGMP or *Musyawarah Guru Mata Pelajaran* (subject-teacher discussion forum) are teacher professional development networks that exist at regional levels to assist teachers with pedagogy. Also known as clusters or *gugus*, these networks have been delivering teacher improvements for the last 30 years (Chang et al., 2014). They are supported by the P4TKs and LPMPs. The KKG works with primary school teachers, while the MGMP serves units of single-subject area teachers at the junior secondary and secondary schools. Although these

structures are potentially major forces for teaching reform, in reality they seem to be limited more to sharing lesson plans for various topics (Chang et al., 2014).

Teacher certification. The strengthening of teacher education programmes has become one of the centrepieces in the MoEC's quality campaign (Chang et al., 2014). The government of Indonesia issued Teacher and Lecturer Law No. 14, passed in 2005, aiming to enhance teacher quality and professionalism through teacher education and professional development (Chang et al., 2014). Law No. 14 (2005) entrusts teacher education quality reform in Indonesia to a teacher certification programme (Fahmi, Maulana, & Yusuf, 2011). Teacher certification is official recognition for teachers who have reached the standards endorsed by the education authorities and serves as a mark of a teacher's competence in subject-matter knowledge and the student-centred teaching methodologies suggested in the curriculum. However, studies on the implementation of the Indonesian teacher certification programme have revealed unsatisfactory results (Fahmi et al., 2011). Fahmi et al. (2011) found that although teacher the certification programme might have improved the teachers' living standard due to the remuneration increase the programme has had no impact on students' achievement.

Education system: An overview. Following independence in 1945, a Ministry of Education, Instruction, and Culture was established (Djojonegoro, 1997). A committee was appointed to design the first national education system, which aimed to provide education for all citizens regardless of status or wealth. The Indonesian government adopted a secular national education system, but also retained religious schools, *madrasah* (Islamic school) and pesantren (Bjork, 2005). The general aim of Indonesian national education is to develop learners' potential to become people with faith towards God the Only One, with good morality, good health, knowledge, intelligence, and independence, and to be democratic and responsible citizens (Department of National Education, 2003). The aim emphasises

religious and moral values, intellectual competence, and democratic values. Although Indonesia is not a theocratic country, the people put religion first as one of the main considerations in their activities. Indonesia is the fourth largest nation in the world after China, India, and the US, with a population over 260 million; 207 million of the people are Muslims, which makes Indonesia the largest Muslim population in the world (MoEC, 2018).

Indonesia established two parallel structures of education management: the Ministry of Religion Affairs (MoRA) and the MoEC. The MoRA is responsible for public and private Islamic educational institution from early childhood to tertiary education. The MoEC is responsible for secular public and private education institutions and all aspects of national education from early childhood to senior secondary education. It is important to note that all schools in Indonesia under MoRA and MoEC provide religious instruction within the national curriculum. Approximately 410,000 public and private schools and 6.1 million teachers provide an education to over 54 million students in Indonesia (MoEC, 2018). Approximately 10 million students are educated in the Islamic system. In general, schools under the MoEC and madrasah under the MoRA both have similar systems. Policies aim at decentralising curriculum; schools and madrasah teach standardised national curriculum; and students are assessed in the same standardised national examination system. In addition to the national curriculum, madrasah at all levels teach Islamic subjects.

The formal schooling system in Indonesia is structured in three levels: primary, known as *sekolah dasar* or madrasah *ibtidaiyah* (6 years), junior secondary or *sekolah menengah pertama* or madrasah *tsanawiyah* (3 years), and senior secondary or *sekolah menengah atas* or madrasah *aliyah* (3 years). In addition, early childhood centres and kindergartens, known as *taman kanak-kanak* or *baitul athfal* for the Islamic system, provide pre-schooling.

Pre-school education aims to stimulate the physical and mental development of pupils outside of the family circle before these youth enter primary education (MoEC, 1996). The objectives of pre-school education are to provide an early basis for growth and development of attitudes, knowledge, skills and initiative. Pre-school education options available in Indonesia include pre-school and play groups. Pre-school is a part of the school-based education system, while playgroup is a part of the out-of-educational system. Pre-school is available for kids from 4 to 6 years of age, while children of 3 years and below can attend playgroup. Approximately 19 million children (10 % of the total students) aged 3 to 6 years attend pre-school education (MoEC, 2018).

Basic education is divided into two levels: primary school (6 years) and junior secondary school (3 years). In 1984, the government of Indonesia institutionalised 6-year compulsory education for primary school age children (7 to 12 years). Then, 9-year compulsory education or basic education (i.e., 6 years of primary plus 3 years of junior secondary school), was officially introduced in 1994 (MoEC, 1996). The aim of the extension from 6-year compulsory education to 9-year compulsory education is to alleviate the problem of child labour and to keep children in school up to the point that they are able to keep up with the changing demands of their society, especially for those who cannot afford to pursue a higher level of education. The goal of basic education is to develop students' life as individuals, members of society, citizens and members of humankind, as well as to prepare them to pursue their studies in secondary education (MoEC, 1996). Nearly 70 % of students are enrolled in basic education (MoEC, 2018). Basic education under the MoEC is provided in public and private schools (including both faith-based and for-profit schools; MoEC, 2013c). Over 79 % of basic education is public. Basic education under the MoRA is reversed: 90 % of madrasah ibtidaiyah and tsanawiyah are private (MoEC, 2018).

Senior secondary education is available to graduates of junior secondary school. Twenty per cent of students are enrolled in senior secondary school and madrasah aliyah (MoEC, 2018). The paths for secondary education include general secondary school and vocational secondary school. General secondary education gives priority to expanding knowledge and developing students' skills and preparing them to continue their studies at the higher level of education. Vocational secondary education gives priority to expanding specific occupational skills and emphasises the preparation of students to enter the world of work and expanding their professional attitude. Vocational schools specialise in particular vocational areas such as economics, agriculture, dress making, motor mechanics, engineering, and construction. Technical training comprises about 25 % of the curriculum; the remainder is devoted to general education. The MoEC (2018) reported that 8.2 % of senior secondary students are enrolled in vocational education.

Chapter Organisation

This thesis is made up of six chapters. I begin Chapter 1 with a story of my learning journey and my beliefs about CL. I follow the story with the rationale of the study and describe the macro contexts that surround this study. In Chapter 2, I review the relevant literature regarding CL, teachers' beliefs and practice, and specifically teachers' beliefs about CL. I end the chapter with an introduction to the theoretical framework used in the study.

In Chapter 3, I present the methodology of the study including an overview of the interpretative research paradigm, case study design, an overview of data collection and data analysis. This chapter also addresses the issues of trustworthiness of the data and ethical consideration. In Chapter 4, I report the findings of Phase 1 of the study, which aims to explore and understand teachers' beliefs about CL. Further, the discussion is presented. In Chapter 5, I report the findings of Phase 2, which aims to examine the implementation of CL

in the classroom and to find out whether teachers' beliefs are consistent with their practice. I finish the chapter by presenting the discussion of the findings.

In the last chapter, Chapter 6, I present the general discussion of the findings of Phase 1 and Phase 2, which are discussed through the lenses of the existing literature and the theoretical framework. I conclude the chapter by reviewing the contributions of the study for teachers' beliefs about and practice of CL and for the study of CL, practical implications for Indonesian education, and limitations of the thesis along with recommendations for future research directions.

Chapter Two: Literature Review and Theoretical Framework

In this chapter I provide an overview of research focused on CL and teachers' beliefs. I start my investigation with a detailed overview of CL including the theories that underpin CL, and CL elements and structures, teachers' roles in CL, and teachers' implementation of CL, before turning to international research that examines CL across cultures and, most importantly to this thesis, CL in Indonesia. In the second section of this chapter, I present the definition of teachers' beliefs before focusing specifically on research specific to teachers' beliefs about CL. Finally, I discuss the theoretical framework in the context of the study.

Cooperative Learning

CL, a teaching approach in which students work in small groups to achieve a goal, has been claimed as the most widely investigated approach in the educational research literature (D. W. Johnson & Johnson, 2009; Sharan, 2010). The long list of the benefits of CL contributes to its success in a wide range of contexts (Gillies, 2014; D. W. Johnson & Johnson, 1992). CL allows individual differences in the classroom, offers opportunities for students to learn and practise interpersonal skills, and promotes communication among students (Antil, Jenkins, & Wayne, 1998). CL also plays an important role in increasing social learning objectives, problem solving, and oral language competence (Cohen & Lotan, 2014). Moreover, CL's widespread use is attributable to the three most crucial factors; CL is based on "theory, validated by research, and operationalized into clear procedures educators can use" (D. W. Johnson & Johnson, 2009, p. 1). With its clear procedures and structures, CL has not only attracted researchers to augment its success through further empirical research, but it has also been adopted by enthused educators who have applied the procedures in their classrooms.

Theories Underpinning Cooperative Learning

CL is not simply a matter of putting students in groups and expecting them to work and learn; CL occurs when a heterogeneous, mutual and cooperative small group works on a structured activity to accomplish a joint goal (Dyson, 2002). A small group is heterogeneous when it consists of members with different backgrounds, intelligence, and traits. It is mutual and cooperative when every group member works conjointly, shares the jobs equally, communicates effectively, and solves problems productively. However, as CL has been practised for decades, a number of psychologists and sociologists define CL in different ways (D. W. Johnson & Johnson, 1992; Slavin, 1980). D. W. Johnson and Johnson (1992) stated that "CL is the instructional use of small groups so that students work together to maximize their own and each other's learning" (p. 174). They argued that students were not only responsible for their own learning but also for helping other members' learning so that they could achieve their group goal.

American psychologist, Slavin (1980), defined CL as "classroom methods in which students work on learning activities in small groups and receive rewards or recognition based on their group's performance" (p. 315). He stressed the importance of individual and group rewards to improve the students' "performance and cohesiveness" (p. 316). *Performance* referred to individual and group effectiveness in conducting the tasks while *cohesiveness* denoted the group's conditions such as showing empathy and sympathy to other group members, and interrelationships among members.

Cohen (1994), a sociologist, argued that CL is "students working together in a group small enough that everyone can participate on a collective task that has been clearly assigned" (p. 3). In contrast to psychologists who emphasised shared goals, and group rewards as well individual rewards, sociologists perceived CL as a delegation of authority and task. They were also concerned with equity and productivity in a group. Equity was

created through heterogeneous groups consisting of “low-status and high-status” students and also students with different abilities (pp. 24–25). Productivity associated with equity was defined as “the occurrence of equal-status interaction within the small groups” (p. 3). Cohen further stated that when the group was productive, the participation rate of students with different status was reduced. To fully define CL, the theories underpinning CL will be presented.

Behavioural learning theory. The use of reward to stimulate students to work in CL groups is influenced by behavioural learning theory whose seminal ideas were developed by Pavlov, a Russian physiologist known for his work in classical conditioning. The theory of classical conditioning or behaviourism claims that the learning process starts when the stimulus or environment influences students, and then students construct their knowledge and present what they learn via overt behaviour (Skinner, 1968). Since the stimulus fully controls learning, the instructors can only control learning when they control the stimuli (Slavin, 2006). Based on this connection, behaviourists argue that to encourage students to express overt behaviour towards CL, there must be extrinsic rewards like cooperative goal structures or cooperative incentive structures (Skinner, 1968). Skinner (1968), further, as reinforcement will produce changes, he stated:

> Once we have arranged the particular type of consequence called a reinforcement, our techniques permit us to shape the behaviour of an organism almost at will.… the contingencies of reinforcement being changes progressively in the direction of the required behaviour. The results are often quite dramatic. In such a demonstration, one can see learning take place. A significant change in behaviour is often obvious as the result of single reinforcement. (p. 10)

In pedagogical practice, a reward is used as a reinforcement to shape students’ behaviour. Slavin (1980) was one of the CL proponents who believed in rewards to increase

academic performance. He distinguished between different reward structures, stating "they may vary in frequency, in magnitude, and in sensitivity, [and] the degree to which increases in performance are matched with increases in reward" (p. 316). An interpersonal reward structure is gained by each individual group member from his/her group performance, that is "individual and group productivity on any of a variety of tasks" (p. 316). A positive reward structure, in contrast, refers to an individual's success which supports other members' success. These reward structures are presented in CL structures such as Team-Games Tournament, and Student Team-Achievement Divisions, and Jigsaw.

Cognitive and developmental theory. Unlike behavioural learning theory, developmental theorists such as Vygotsky and Piaget believed that learning takes place when students construct knowledge in social contexts, such as with peers and in a range of environments. By interaction, children can increase their cognition through language (Vygotsky, 1978). Language plays an important role because by speaking to other peers, children develop their cognition as they deliver their thinking via language. Language also helps them retain information being explained and create ideas when they have to elaborate the information to others (Vygotsky, 1978).

Vygotsky (1978) declared that children are in their zone of proximal development (ZPD) when they work on a difficult task and their peers help them in solving the problem. The ZPD is a dynamic region beyond the children's current ability stage; when children gain new information, skills, and understanding, their ZPD moves with their development. Rogoff (1990) broadened the concept of the ZPD:

> Interactions in the zone of proximal development are the crucible of development and of culture, in that they allow children to participate in activities that would be impossible for them alone, using cultural tools that themselves must be adapted to the specific practical activities at hand. (p. 16)

This claim stressed the situated nature and social interconnectedness of learning through cognitive apprenticeship. In Rogoff's (2015) TEDx presentation in Santa Cruz, she described the contrast between children of European-American background and Mexican heritage in the way they paid consideration to and gained from events around them, and cooperated. The children's attention and learning relate to their families' degree of familiarity with learning traditions. Mexican heritage children were more likely to collaborate and share jobs with each other but children from middle-class European-American backgrounds often divided the activity.

Although both Vygotsky and Piaget considered social and natural processes in development, Piaget focused on the individual then proceeded to the social world, whereas Vygotsky focused on children participating with other people in a social order (Tudge & Rogoff, 1999).

Social interdependence theory. The theory of social interdependence was developed by Gestalt psychologists such as Lewin, Koffka, and Deutsch around the early 1900s. However, it was not until the 1970s that social interdependence theory was proposed by D. W. Johnson and Johnson (1975), one of whom was Deutsch's former student. D. W. Johnson and Johnson (2009) proposed that CL not only promotes human cognition but also helps students to cooperate effectively. In their later study, they claimed that the use of social interdependence theory in education has been successful and wide spread.

Interdependence among group members was perceived to be the most crucial factor in group work; however, the degree of interdependence varied among group members (Lewin, 1948, p. 54, cited in Deutsch & Krauss, 1965). Moreover, there are three types of social interdependence: positive, negative, and no interdependence (D. W. Johnson, 2003). Positive interdependence motivates every member in the group to work cooperatively to achieve the group goals. Negative interdependence means that there is a negative relationship among

members in the group which hinders the group from achieving their goals (D. W. Johnson & Johnson, 2009). No interaction occurs where there is no interdependence, since the members think that the success of the group is not related to their own achievement. Hence, to achieve the effectiveness of cooperation, a cooperative group is required to meet the elements of CL. The CL elements are discussed as follows.

Cooperative Learning Elements

The success of CL depends considerably on the appropriate execution of its contributing elements. D. W. Johnson and Johnson (2009) proposed five elements, namely positive interdependence, individual accountability, face-to-face promotive interaction, interpersonal and small-group skills, and group processing.

Positive interdependence. The first principle for an effectively structured cooperative lesson is positive interdependence. Within CL situations, learners have two responsibilities: firstly, to learn the assigned material individually, and secondly, to ensure that all the members of the group learn the assigned material. Positive interdependence exists when learners perceive that they are linked with their fellow group members in such a way that they cannot succeed unless their fellow group members do (and vice versa) and that they must coordinate their efforts with the efforts of their fellow group members to complete a task (D. W. Johnson & Johnson, 2009). Thus, positive interdependence can be seen as a learning a situation that can encourage cooperation among students and help them boost their achievement (S. Kagan & Kagan, 2009). By putting positive interdependence in place, students work together to create a caring, cooperative community and increase achievement by completing the task.

Individual accountability. Individual accountability exists when the performance of each individual is assessed and the results are given back to the group and the individual, in order to ascertain who needs more assistance, support, and encouragement in learning. The

purpose of CL groups is to make each member a stronger individual in his or her own right. The mechanism of accountability is present when the students do the assigned task which makes them individually accountable (Dyson & Casey, 2012). An example of individual accountability is illuminated in one of the CL structures: Numbered Heads Together (S. Kagan & Kagan, 2009). In the Numbered Heads Together structure, each student is required to write their best answer individually and show it to their teammates before they put their heads together to tutor and coach each other. Further, in each round, one student in each team will be randomly selected to share the team's answer with the class and teacher. Thus, all students are individually accountable, as they are required to perform in front of their teammates in each round, or they may be randomly selected to represent their team to share the answer with their teacher and the rest of the class. Hence, individual accountability limits the number of deskbound and inactive group members.

Face-to-face promotive interaction. To achieve face-to-face interaction students are organised in small groups with close proximity to their group mates. This practice encourages students to engage in verbal interchanges such as talking aloud and challenging one another's points of view. When students participate in face-to-face discussions, they understand they must actively encourage each other's equal participation in the joint talk (Gillies, 2007, 2016). Participating in face-to-face interactions gives students a good opportunity to develop their social skills like listening to others, selecting and controlling what they say and mastering their presenting skills. In addition, Gillies (2007, 2016) further claimed that engaging in verbal interactions also gives students the capacity to read both the verbal and nonverbal body language that are critical to building personal connections between group members.

Interpersonal and small-group skills. To work in a group successfully, each group member needs to be taught how to communicate effectively with each other. The learning

intention allows students to present their ideas clearly, recognise each other's contributions correctly and constructively, manage conflicts among group members effectively and engage in democratic decision making. These skills are very important since they help reduce interpersonal conflicts and facilitate interaction, and promote learning (Cohen & Lotan, 2014). Students need to be taught these skills if the group is to succeed. Simply placing unskilled students into a group does not help them communicate more effectively (Gillies, 2007, 2016).

Group processing. This process can be a type of formative assessment that involves group members in assessing the processes of their learning (Gillies 2007, 2016). This definition has been expanded by recent research that suggests group processing can act as a form of debriefing or checking in to determine how the group is functioning. This student-centred reflective dialogue can develop social interaction and the affective (emotionally) domain of learning (Dyson & Casey, 2012; Dyson, Colby, & Barrat, 2016). However, to achieve productive joint group work, group members need to regularly assess how they are managing their group including what has been done and what they will need to do to accomplish their goal. When students are involved in this process, they have a chance to keep an eye on clarifying and improving each members' contributions so that each member understands how they are performing. Group processing can facilitate the group's functioning and gives each member an opportunity to improve their social and emotional skills (Dyson et al., 2016).

Cooperative Learning Structures

A challenge for both researchers and teachers trying to understand CL has been created by the use of different terms for a CL technique (a way to organise groups with goals and tasks for cooperation). Spencer Kagan (1989) named a CL technique as *structure* (p. 12). D. W. Johnson, Johnson, and Stanne (2000) and Slavin (2010) called CL techniques *methods*.

Structures (S. Kagan, 1989) contain sequences that organise the student social interactions to implement the elements of CL (S. Kagan & Kagan, 2009). The step-by-step procedures of CL structures can be used to present, practise and assess content (Dyson & Casey, 2012). To date more than 200 structures have been developed (S. Kagan & Kagan, 2009). Selected structures include Numbered Heads Together, Think-Pair-Share, and Inside-Outside Circle (S. Kagan & Kagan, 2009). Each structure involves students in a group learning situation. Teachers put the content of the lesson into the structure to create an activity. In this way, the structures may be modified and adapted to any and all learning environments with any curriculum (S. Kagan, 1989). For the purpose of my study, I adopt Spencer Kagan's (1989) term, *CL structures*, through the rest of the thesis.

Kagan structures. S. Kagan and Kagan (2009) describe two different structures: interpersonal and academic functions. Interpersonal functions include 1) class building, improving relations among classmates; 2) team building, getting to know more about the members in a team to build a sense of team identity and mutual support; 3) social skills, improving students' cooperative behaviour to work in a team; 4) communication skills, increasing students' skills to communicate ideas, thoughts, and information; and 5) decision making which helps students to learn how to seek win-win solutions. Academic functions encompass 1) knowledge building, helping students to recall important facts and information in the subject content; 2) procedure learning, assisting students to master sets of procedures or skills in the knowledge content; 3) processing information, assisting students to remember information for long-term memory; 4) thinking skills, which function to help students to learn to develop thinking skills such as analysing, categorising, and problem solving; 5) presenting information, which helps students to structure their presentation allowing efficient sharing of ideas of their projects.

Numbered Heads Together. Numbered Heads Together is a CL structure which can be used to develop students' social skills, knowledge building, procedure learning, processing information, and thinking skills (S. Kagan & Kagan, 2009). Students are placed in groups and each member is given a number (from 1 to the maximum number in each group). The teacher poses a question and the group discuss the answers and coach each other. This ensures that each student in the group knows the answer. Then, the teacher randomly calls a specific number to respond; in that way students do not know if they will be called upon to provide the answer or not. This CL structure helps keep the students individually accountable for knowing the answer to the question or problem posed by the teacher.

Think-Pair-Share. Think-Pair-Share functions to improve students' social skills, communication skills, processing information, and thinking skills. This structure can be used with a minimum number of two students in a group. First, the teacher poses a question, a topic, or a problem for the students to think about individually. Then, students share their thoughts in a pair or a group of four. The last step is to share the thoughts with the class. Think-Pair-Share helps students generate or revise hypotheses, inductive, and deductive reasoning (S. Kagan, 1989).

Inside-Outside Circle. Inside-Outside Circle improves class team building, students' social skills, knowledge building, and thinking skills. It is used to check students' understanding of the content knowledge, review of the lesson, share information and for coaching. It can be applied for the whole class. Students form two concentric circles. The inside circle faces out; the outer circle faces in. Students exchange information with a partner until the teacher signals the outer circle to move in one direction, giving each student a new partner to talk to.

Structured team-learning structures. Slavin (2010) divided CL structures into two main categories: (a) structured team learning which involves rewards for teams based on the

learning progress of their members, with team success depending on individual learning, not group products; (b) informal group learning structures which focus on social dynamics, projects, and discussion rather than on mastery of specified content. In addition, there are three central concepts to all student team-learning structures that were developed by Slavin's research group at John Hopkins University: team rewards, individual accountability, and equal opportunities for success (Slavin, 2010).

Student Teams-Achievement Divisions (STAD). STAD, developed by Slavin and his colleagues, was based on individual learning (individual scores) as group rewards. It is recommended that the group size is around four to five persons in a heterogeneous group which consists of different achievement levels, gender, and ethnicities (Slavin, 1991). The learning goals are factual knowledge and simple skills in all subjects, such as mathematics, language arts, social science, science and art. Every individual has equal chances to get a reward, which consists of a group score based on improvement scores. After learning the material, learners work together in groups to prepare for an individual test. Individual scores (improvement scores) are combined as a group score. If the group score is higher than a declared criteria score, the group is rewarded or recognised. Sometimes groups are compared with each other and only the best groups are rewarded. Before learning together, however, group building activities are recommended.

***Team-Games Tournament (TGT*)**. TGT was developed at John Hopkins University by David DeVries and Keith Edward (Sharan, 2010). TGT is similar to STAD with one difference: Instead of performing individual tests there are tournaments (Slavin, 1991). Learners compete with learners of other groups who are similar in their achievement levels in order to get scores for their own group. Group rewards are based on individual learning (in the tournaments, group members get scores for their group). Equal chances to get a reward occur because competition is between the members who have the same performance level.

Team-Assisted Individualisation (TAI). TAI, developed by Slavin and his colleagues, is a four-member mixed-ability group which was specially designed to teach mathematics for algebra in Grades 3–6 (Slavin, 1991). Every group member works on a task according to his or her performance in an achievement test in the beginning. Group members work at different tasks and have as much time as they need. With the help of answer sheets, they control their solutions and help each other when there are problems. The teacher works with small groups of learners who have the same performance level. Every week a group score is calculated consisting of the number of units that are finished and test scores at the end. Groups are recognised for reaching a certain amount of points. Group rewards are based on individual learning (individual scores and number of units finished). Equal chances to get a reward occur since the tasks match the performance level of the learners.

Cooperative Integrated Reading and Composition (CIRC). CIRC is a comprehensive programme for teaching reading and writing in upper elementary grades (Slavin, 1991). Learners work together in homogeneous dyads or triads and heterogeneous groups consisting of two dyads or triads. There are also units where the whole class or groups of learners with a similar achievement level are involved. Additionally, learners read books and write reports individually. There are different activities in the dyads, triads, and groups such as reading, summarising, spelling, answering questions, testing, writing, and editing essays. The group gains scores based on the achievement in individual tests, essays, and book reports. There are different rewards depending upon the scores. Learners work on materials and tests adapted to the individual performance level, so that everybody has the same chances to be successful.

Informal group learning structures. The structures include Jigsaw (a CL structure of organising classroom activity that requires students to depend on each other to succeed)

and Learning Together and Alone. Jigsaw is sometimes called Expert Groups and is the most common CL structure used in mainstream teaching.

Jigsaw. Jigsaw was created and developed by Elliot Aronson and his colleagues at the University of Texas and further study developed at the University of California at Santa Cruz (Aronson, Blaney, Stephan, Silkes, & Snapp, 1978). The teacher and student group leader function as the facilitators in the Jigsaw classroom (Aronson et al., 1978). The student group leader manages the group work, for example appointing a member to be a timer, a reader, and a recorder; reminding the members to focus on the task; and helping the group when they have a disagreement (Aronson & Patnoe, 2011). Since a student group leader has a key role, Aronson and Patnoe (2011) suggested that he/she be given training on how to lead a group and how to handle difficult situations. Ideally, the student group leader rotates so that everyone has the opportunity to experience the role. After student group leaders are appointed, groups work on specific tasks provided by the teacher. Learning takes place in expert and Jigsaw groups. Before learners work in a Jigsaw group, which consists of at least one expert for every part of the material, they firstly work on a part of the whole material and become experts in it. In the Jigsaw group, they share their expert knowledge with each other. Unlike the first four structured team-learning structures, which use rewards and competitions to motivate learners to achieve the goals, Jigsaw offers fun competitions to increase learners' performance without producing negative consequences (Aronson & Patnoe, 2011). Research on Jigsaw classrooms reported that learners liked school better, grew to like their group mates, increased their self-esteem, and outperformed learners from the competitive classrooms (Aronson & Patnoe, 2011).

Learning Together and Alone. David Johnson and Roger Johnson from the University of Minnesota developed Learning Together and Alone (D. W. Johnson & Johnson, 1975), which they defined as "a conceptual system teachers can use to structure any lesson

cooperatively, in any subject area, grade level or educational setting" (p. 95). The structure is an integrated application of cooperative, competitive and individualistic learning (D. W. Johnson & Johnson, 2002). It comprises different activities in groups in which the five elements—positive interdependence, individual accountability, face-to-face promotive interaction, interpersonal and small-group skills, and group processing—are realised in order for CL to be effective. The students work in groups of four or five and complete a worksheet in a cooperative manner. After completing the sheet, they hand it in and are praised for how well they accomplish the group worksheet (Tan, Sharan, & Lee, 2006). Group rewards are given based on individual learning or on a group product.

Teachers' Roles in Cooperative Learning

The teachers' role in CL is crucial in the implementation of CL. Gillies, Ashman, and Terwel (2008), in their book *The Teacher's Role in Implementing Cooperative Learning in the Classroom,* argued that many teachers did not have a clear understanding about how to establish effective cooperative groups, and how to implement CL theories into practice, and did not understand the underlying theories of CL. Cohen and Lotan (2014) stated that a teacher's role in the CL class is no longer one of direct supervisor who is responsible for correcting students' mistakes on the spot; teachers delegate authority to their students in the CL classroom. D. W. Johnson and Johnson (2008) pointed out that teachers have different roles in three different types of CL groups. The types are formal, informal and cooperative-based groups. The teacher's roles in each type of CL group are described below.

Formal CL groups require teachers to create opportunities for small groups of students to work collaboratively, to teach particular content and to achieve specific learning goals (D. W. Johnson & Johnson, 2008). The duration of time spent together as a group ranges from one class period to several weeks. During this time, it is expected that students complete an assigned task for learning and to make sure all group members thoroughly understand and

complete the task as well. When using formal CL groups, teachers are encouraged to specify the objectives of the lesson, explain the task, stress the importance of positive interdependence, monitor students' learning and assess students' learning, as well as to aid students with processing how well their group is functioning (D. W. Johnson & Johnson, 2008).

Informal CL group interaction may last for a few minutes or until the end of a class period, depending on the learning activity (D. W. Johnson & Johnson, 2008). During this time, teachers are encouraged to lecture, model or show a video on the subject matter being taught. Additionally, this time can be used for the teacher to help students focus their attention on what is being learned, set the stage for conducive learning, set the expectations for the amount of information covered during a session, make sure students have time to learn, and understand the content being taught, and provide closure at the end of an instructional session (D. W. Johnson & Johnson, 2008). The teacher uses this time as a teachable moment for students because it occurs during instruction. During this time, the teacher may review materials, goals and objectives that students are expected to master. Valuable data related to student learning may be collected while groups are working cooperatively. This information may be used to make changes in instruction to meet the needs of students.

Cooperative-based groups are heterogeneous in nature and membership may last for up to one school year (D. W. Johnson & Johnson, 2008). Cooperative-based groups are set up at the beginning of a unit of instruction and provide a consistent group to meet with at the beginning of the lesson. Members are expected to provide accountability for completed tasks, stability, encouragement, assistance and support for each other's learning. This type of support influences student achievement regardless of content area of focus. Students are able to identify the strengths and weaknesses of group members, which in turn can be used to help

each member achieve their academic goals because the strengths of group members are valuable resources that contribute to the achievement of all members.

Teachers' Implementation of Cooperative Learning

With the pivotal role of teachers in implementing CL, research has identified several similar factors that influence teachers use of CL such as support from district education office and principal (Basset, McWhirter, & Kitzmiller, 1999), colleagues (Basset et al., 1999; Shachar & Shmuelevitz, 1997), students (Dyson et al., 2016; Gillies & Boyle, 2010; Shachar & Shmuelevitz, 1997), and CL professional development (Dyson et al., 2016; Siegel, 2005). In the statistical analysis of questionnaires collected from 115 teachers of various subjects of teaching, Basset et al. (1999) reported that the majority of teacher participants in their study indicated that they received support from the district and principal to implement CL. Moreover, Basset et al. (1999) found that the teachers in their study subscribed to CL because they received encouragement from their colleagues. Further, Shachar and Shmuelevitz (1997) and Siegel (2005) reported that teachers who participated in collaborative staff work were more likely to use CL.

Siegel (2005), employing ethnography inquiry, conducted a qualitative study to explore variations in five teacher participants' implementation of CL. Siegel (2005) reported that the teachers' implementation of CL was influenced by CL professional development and classroom experiences; lesson planning; and teaching contexts, which included lesson objectives, perceptions about student ability, task difficulty, curricular constraints, and collegial support. Likewise, Antil et al. (1998) found that teachers' understanding of CL was influenced by training experiences. Dyson (2002) and Dyson et al. (2016) revealed that the use of CL involved changes in teaching role, lesson planning, and use of instructional time.

In a study conducted by Gillies and Boyle (2010) in Australia, 10 teachers who were trained in a 2-day CL workshop were asked to implement CL with some specific objectives

such as the establishment of task interdependence and individual accountability, small-group orientation, and complex task construction. The teachers in Gillies and Boyle's (2010) study were interviewed and their perceptions were observed. The results show that the teachers had positive experiences using CL but Gillies and Boyle (2010) identified factors that impeded their implementation of CL. These factors were students' off-task behaviour during group work; time management, and required preparation for CL; group formation; task construction; social-skill orientation for the students, especially to manage conflict; and assessing students in small groups (Gillies & Boyle, 2010).

In a recent study conducted in Aotearoa New Zealand, Dyson et al. (2016) aimed to investigate the implementation of CL by 12 generalist primary school teachers, trained teachers responsible for teaching eight learning areas such as literacy, maths, physical education and science. Drawing from multiple data sources, Dyson et al. (2016) highlighted several findings. The teachers in Dyson et al.'s study indicated that social skills were important features for students to possess in group work. Further, Dyson et al. reported that due to the complexity of CL structures and their procedures, the teachers had difficulty choosing the ones that were suitable for their physical education teaching. Last, Dyson et al. (2016) discovered that the teachers indicated that by using CL they gave more opportunities to their students to take more responsibility for their learning and create a more encouraging learning environment.

Cooperative Learning Across Cultures

The empirical findings of the success of CL confirm that CL is one of the most effective pedagogical approaches for teaching and learning in the 21st century (D. W. Johnson & Johnson, 2014). However, there have been doubts regarding the applicability of CL in other cultural contexts since most of the research on CL has been conducted in a Western setting (Sharan, 2010). The question of how culture can be represented for diverse

forms of CL perception, application, and effectiveness was raised in a volume of the *International Journal of Educational Research* in 1995. The volume reported on the application of CL in six countries and regions in the world: Germany (Huber, 1995), Japan (Sugie, 1995), UK (Cowie, 1995), Latin America (Brown & Brown, 1995), Sub-Saharan Africa (Taylor, 1995), and Israel (Hertz-Lazarowitz & Zelniker, 1995). A recurring theme throughout the volume was that differences in culture were likely accountable for the issues raised in their studies.

CL studies conducted in East and Southeast Asia, similarly reported that there were potential cultural mismatches of Eastern cultures with the elements of CL. A research review paper conducted by Thanh (2013) on 17 studies, from 1990 to 2007, of the effect of CL on academic performance in Confucian-heritage culture (CHC) countries such as China, Japan, Singapore, Vietnam, and Korea, revealed that approximately 50 % of the studies reported that the structures of CL did not improve students' achievement. Thanh summarised that one of the main failures of the application of CL in CHC classrooms was the disjunction between the basic elements of CL and CHC cultural values. In CHC countries, teachers were perceived as the source of knowledge, which seemed to contradict the student-centred constructivist perspective underlying CL.

Likewise, in a review of studies of the application of CL in Malaysia from 1996 to 2003, Zakaria and Ikhsan (2007) reported that there were some challenges. Among these challenges were that teachers had reservations that their students could acquire knowledge by only learning from their peers and students might lack necessary skills to work in groups. A later study conducted by Arumugam, Rafik-Galea, De Mello, and Dass (2013) reported that cultural norms such as *budi bahasa* (language of character using refined language) and gotong royong held by Malay students influenced their cooperative behaviours in CL groups when compared to Chinese-descendent students' cooperative behaviours. Arumugam et al.

reported that Chinese students, whose cultural root was Confucianism which believes that teachers are authority figures who should be obeyed and respected, preferred to work individually on their projects rather than work in groups (Arumugam et al., 2013). Arumugam et al.'s study shows that different cultures might support or impede the implementation of CL.

Cooperative Learning in Indonesia

CL is a relatively recent pedagogical approach in Indonesia. Since it was first introduced in the early 2000s (Noel et al., 2006), CL has enthused Indonesian teachers and researchers because of its potential to increase students' achievement and its alignment with Indonesian values. There has been much research conducted on the application of CL in Indonesian educational institutions. CL has been studied in different subjects such as mathematics, English, and science and applied in different age groups (Ghufron & Ermawati, 2018; Masnaini, Copriady, & Osman, 2018; Sari, Budiyono, & Slamet, 2018). There have been positive results reported; however, there are some issues and concerns in implementing CL in the Indonesian context.

Inspired by the alignment of CL element with the aforementioned Indonesian values (gotong royong and musyawarah), some Indonesian researchers have integrated the cultural practices the Dayak Ngaju tribe, Central Kalimantan, into CL. Demitra et al. (2012) designed a model of CL inspired by the indigenous practice called *handep* cooperative learning. Handep means mutual cooperation (Demitra & Sarjoko, 2018). The process of handep starts when a family, for example, Family A, needs help to plant their rice paddy and requests it during a community meeting. In the meeting, the family will be helped by Family B and Family C. When the job is completed, Family A and Family C will help Family B to plant their paddy, and so on. Based on the handep process, Demitra et al. (2012) developed the handep cooperative learning structure in teaching mathematics for junior high school

students. The steps are as follows: 1) students understand a concept; 2) they form a mixed-academic group consisting of 3–4 students; 3) each member studies a mathematic concept or problem individually; 4) he or she shares with the group the problems that they had in understanding the concept, and the group helps; 5) the group finds the solutions to the problems within their group; 6) the groups help the other groups that cannot solve the problems; 7) groups collaborate to evaluate the solutions; and 8) the groups present the solutions and celebrate their success.

Zakaria, Solfitri, Daud, and Abidin (2013) reported the effects of CL on students' mathematics achievement in secondary school students in Pekanbaru, Indonesia. They were looking at differences in maths achievement between students taught using the Jigsaw structure and students taught using teacher-centred methods, and students' perceptions of the Jigsaw structure in maths. The result revealed that Jigsaw was more effective for increasing students' maths achievement than the teacher-centred method. By explaining and receiving a new concept or information in the Jigsaw steps, the students were able to retain the new concept or information much longer in their memory and they better understood what they learned, therefore improving their performance (Zakaria et al., 2013). The students also perceived that CL was beneficial to them. They helped each other voluntarily and promoted each other's learning. However, 2.5 % of the respondents did not like to learn in groups. This means that CL is not for everyone (Zakaria et al., 2013).

Tamah (2013) explored her students' perceptions of CL after experiencing Learning Together and Alone and Jigsaw in her reading class. After the first half of the semester, data were collected through open-ended and closed-ended questions. At the end of the semester, the students were given the same set of questions, but one question was dropped from her survey, i.e., "What is group work according to you?" The result of the first half of the semester showed that 21.05 % of the students preferred a whole-class teacher-directed

classroom and 78.95 % liked a CL classroom. However, at the end of the semester, the students' preferences for CL increased from 79 % to 95 % (Tamah, 2013). When the students were asked whether they preferred either "more sessions for group work" and "50 % for whole-class teacher-directed and 50 % for CL," the result in the end of semester survey revealed that almost half of the students chose the combination of whole-class teacher-directed instruction and the CL method. The result indicated that although the students showed enthusiasm for the CL approach, they would still need teachers to take more control of the CL class.

CL fundamentally changes the structure of the Indonesian teaching environment in terms of approach and physical characteristics. The idea of learners learning together, teaching and sharing, is appealing, not just as a result of the potential for higher accomplishment demonstrated in earlier research from the West (D. W. Johnson & Johnson, 2002, 2009; D. W. Johnson et al., 2000) but also because it has an intention of cultural appropriateness. The prevalent teaching approach, however, has been teacher-directed, which might impede the implementation of CL. Previous research has demonstrated that the success of pedagogical change is influenced by teachers' beliefs; beliefs affect how reform efforts are translated and implemented (Fives & Buehl, 2012).

Beliefs in this Study

Although much has been written about the definition of beliefs, researchers have pointed out that it is difficult to define beliefs (Pajares, 1992; Richardson, 1996). The issue with defining beliefs lies in the difficulty of differentiating beliefs from knowledge (Nespor, 1987; Pajares, 1992). Nespor (1987) recommended that beliefs be differentiated from knowledge since the concept of belief systems do not need consensus from those who hold them or the outsiders. Knowledge systems, on the other hand, need a consensus about the ways in which knowledge can be judged or evaluated (Nespor, 1987). Later, Pajares (1992)

and Richardson (1996) defined beliefs as subjective judgements that an individual takes to be true, while knowledge depends on a conditional belief that is confirmed by a community as being true (Richardson, 1996).

The term *beliefs*, used in this current study, is derived from Pajares (1992) and Richardson (1996), whose work has been influenced by Nespor's (1987) research, in which beliefs are distinguished from knowledge. Nespor (1987) described at least four features by which beliefs differ from knowledge: "existential presumption," "alternativity," "affective and evaluative loading," and "episodic structure" (pp. 318–320). First, according to Pajares (1992), existential presumptions are "the incontrovertible, personal truth everyone holds" (p. 309). They are personal and can be shaped by chance, experiences, or events. Second, beliefs sometimes refer to "alternative worlds" or "alternative realities" (Abelson, 1979, p. 357). Thus, the ideal situation might be different from the present reality (Nespor, 1987). Third, belief systems depend more on affective and evaluative components than knowledge systems (Nespor, 1987). Nespor (1987) suggested that individual belief systems might be influenced significantly by feelings, moods, and subjective judgements of individual preferences. Lastly, belief systems are stored in the episodic memory, and influenced by personal experiences or cultural sources, while knowledge systems were stored semantically (Nespor, 1987). Nespor concluded that beliefs are more influential than knowledge in determining how teachers transform teaching into a set of well-defined tasks and are stronger predictors of teachers' behaviour.

Teachers' Beliefs and Practice

Teachers may not be able to fully express the beliefs or theories that underline their practice or even be aware of their beliefs (Sahin, Bullock, & Stables, 2002). Argyris and Schön (1974), with their notion of "theory in practice," argued that the theory that actually controls someone's actions is their "theory-in-use," which may or may not be congruent with

their “espoused theory,” or theory that one believes (p. 7). Argyris and Schön suggested that to be able to know one’s theory-in-use, a researcher has to observe his/her behaviour. In another study, Pajares (1992) identified beliefs as predecessors to behaviours that individuals enact based on the beliefs that they hold. Beliefs are thought to drive actions and the relationship between beliefs and actions is interactive (Richardson, 1996).

Empirical findings report that teachers’ beliefs are congruent or incongruent with their practice. Beswick (2008) and Mitchell and Hegde (2007) indicated that the beliefs teachers hold about teaching and learning are consistent with their practices. However, it was also found in some studies that teachers’ beliefs are not consistent with their own practice (D. M. Kagan, 1992; I. Lee, 2009; Y. S. Lee, Baik, & Charlesworth, 2006). Inconsistency of teachers’ beliefs and practice is caused by several internal factors. Kang (2008) reported that preservice and practising teachers do not act on their beliefs when they have insufficient knowledge of the content. Mouza (2009), in her longitudinal research study, confirmed that content knowledge, pedagogical knowledge, and pedagogical content knowledge are important for teachers to enact their beliefs. The lack of self-reflection and self-awareness might also hinder the consistency between teachers’ beliefs and practice (Roehrig, Turner, Grove, Schneider, & Liu, 2009).

External factors such as students, colleagues, and schools may also impede the congruence between teachers’ beliefs and practice. Savasci and Berlin (2012) reported that the most frequent self-reported challenges implementing constructivist beliefs in practice were student behaviour and student ability. The students preferred worksheets to inquiry-based instruction in order to avoid deep thinking. Further, one of Kang’s (2008) findings showed that preservice teachers need to be supported by more experienced teachers in order to enact their espoused beliefs. Kang (2008) also suggested that preservice teachers should be fully supported in enacting their beliefs during their field experiences.

In the context of Indonesia, there is little research on teachers' beliefs (Zacharias, 2004). Ubaidillah (2015) and Ummu (2015) who examined the congruence between beliefs and practice of English as a foreign language (EFL) reported that the teachers' beliefs about EFL were incongruent with the practice. The teachers were observed teaching about English in a language other than English. The use of other languages in an EFL class hinders students from optimally acquiring the target language since English is a foreign language in Indonesia (Ubaidillah, 2015). Thus, teachers are expected to speak English to give students sufficient exposure to the target language. Agustina (2017) studied English teachers' beliefs and practice in developing learner autonomy using a mixed-methods study. The findings revealed that although teachers had positive beliefs about learner autonomy in English subject, they could not practise their beliefs. Agustina (2017) reported that contextual factors such as classroom management skills, learning resources, and curriculum impeded teachers' developing their students' autonomy in language learning. In the context of Indonesia, the study of the association between teacher beliefs and practice is urgent, especially as there has been insufficient research in this field and extant studies found that teachers' beliefs are not in consistent with their practice.

Teachers' Beliefs About Cooperative Learning

There are few studies that report on teachers' beliefs about CL. Lumpe, Haney, and Czerniak (1998) studied the beliefs of science teachers in Ohio, US, about employing CL. They reported that, in general, the teacher participants believed that CL increased their students' ideas and problem-solving techniques in science and taught the students leadership, communication, and compromise skills. Lumpe et al. concluded that the teachers' positive self-efficacy supported them to use CL. However, they reported that the teachers' beliefs about CL would not likely to be practised if the teachers were not supported by the curriculum, available resources (funding, curriculum materials, supplies, and equipment, etc.)

and staff development opportunities, long-term CL professional development, and collegial support. The teachers reported that CL consumed much time, thus they were worried that they would not be able to finish the curriculum materials.

Antil, Jenkins, Wayne, and Vadasy (1998) studied 85 teachers from six urban and suburban schools in the US, investigating their beliefs about the goals for CL, their experiences in using it, their CL skills, and the way they implemented CL. They reported that more than 70 % of the participating teachers believed that CL enhanced academic learning, increased students' participation in learning and task engagement, and assisted the students to learn to cooperate and value cooperation. However, they disagreed about the ways the teachers might use CL as suggested by a CL "researcher developer" (p. 447). Of the 85 teachers, only one teacher indicated that she incorporated D. W. Johnson and Johnson's (2009) five elements (positive interdependence, individual accountability, promotive interaction, interpersonal and small-group skills, and group processing). One teacher used Cohen's (1994) four elements, referred to as complex instruction: open-ended conceptual or discovery tasks that emphasise higher order thinking skills, group tasks that require input from other members, multiple tasks related to a central intellectual theme with the opportunity to experience more than one of these related tasks, and roles assigned to different group members. A few more used Slavin's (1990) elements, focusing on positive interdependence and individual accountability. Antil et al. (1998) concluded that the discrepancies occurred for two reasons. First, the teachers perceived that CL models as suggested by CL researcher developers were too complicated. Antil et al. proposed that complications were caused by the time and effort teachers needed to establish CL elements. Second, the teachers learned more than one CL structure, some even learned from the researcher developers themselves. However, Antil et al. argued that the researcher developers, in disseminating CL structures, conveyed the benefits of CL, but rarely informed

the teachers which conditions needed to be met to achieve the benefits. As a result, the teachers might assume that all CL structures were similar and tend to adopt the structures within their own context although the adjustment might yield undesirable outcomes.

Later research in Canada by Abrami, Poulsen, and Chambers (2004), using expectancy theory (Shah & Higgins, 1997), identified teachers' self-efficacy as teachers, CL skills, and students' skills for effective teamwork as three important factors that influenced the beliefs of both regular CL users (used CL as a part of classroom routine) and non-users (used CL only rarely or not at all). Using the survey as data source, Abrami et al. reported that CL training might not have a positive impact on the teachers' CL beliefs if teachers had inadequate beliefs about their own self-efficacy as teachers. CL users in the study also believed that clear CL training prepared them to implement CL, and they believed that CL was easy to use. Lastly, CL users in the study believed that their students' skills in working in groups helped them to implement effective CL. Likewise, the survey results of Abrami et al.'s (2004) study indicated that frequent CL users, when compared to non-users, firmly believed in their own efficacy as teachers, believing that CL training adequately prepared them to implement the approach in their own context, and that their students had the necessary skills to have effective teamwork.

As the above three studies employed only surveys and interviews to investigate the beliefs about CL, they did not investigate how teachers' beliefs about CL were consistent with their practice. Pajares (1992) suggested that data taken from only surveys or interviews cannot adequately reflect the teachers' actual beliefs and practice. While previous studies reported that teachers' beliefs were not consistent with their practice (Kwon, 2004; Y. S. Lee et al., 2006; Sahin et al., 2002), methodological issues might contribute to some of these reported inconsistencies (Fives & Buehl, 2012; D. M. Kagan, 1992; Pajares, 1992). In addition, Fives and Buehl (2012) argued that the relationship between teachers' beliefs and

practice is complex, thus multiple data sources are needed to investigate whether teachers' beliefs are congruent with their practice.

The Ecological System Theory: Theoretical Framework

> [There are] two essential requirements of a good theory: first, that it can be translated into concrete research designs; and second, that it can be applied to phenomena that it presumes to explain as they are manifested in the actual contexts in which they occur. Need I say that, in the case of human development, these are the contexts of everyday life. (Bronfenbrenner, 1993, p. 5)

I was drawn to the work of Urie Bronfenbrenner (1979) because his ecological theory provides a framework for understanding the complexity of Indonesian teacher beliefs and practice about CL. In Bronfenbrenner's view, it is simply impossible to understand human behaviour and change over time without considering the many and varied elements of the surrounding context. In his book *The Ecology of Human Development* (1979), he urges that "the properties of the person and of the environment, the structure of the developmental settings, and the process that take place within and between them must be viewed as independent and analysed in systems terms" (p. 41). Bronfenbrenner states that the process of development starts from smaller individual elements known as the microsystem, then moves to bigger contextual components: the mesosystem, exosystem, and macrosystem.

The microsystem represents the individual's immediate social and physical environment. The microsystem consists of three patterns that influence an individual's development: individual activities, roles, and interpersonal relations (Bronfenbrenner, 1979). The mesosystem occurs when two or more settings interact with one another as dyads. It extends and develops continuously as the individual moves to new setting or environment such as schools and offices. The third layer of the environment is the exosystem. The exosystem consists of settings in which the individual does not have an active role but which

may have direct or indirect impact on the individual. The macrosystem constitutes the outer layer of an individual's ecological environment. It consists of the overarching pattern of micro-, meso-, and exo-system characteristics or a given culture, subculture, or other, broader social context (Bronfenbrenner, 1979). Thus, the macrosystem covers settings in which an individual shares the same values, cultures, or systems with others. The four ecological environments can be summarised in Figure 1.

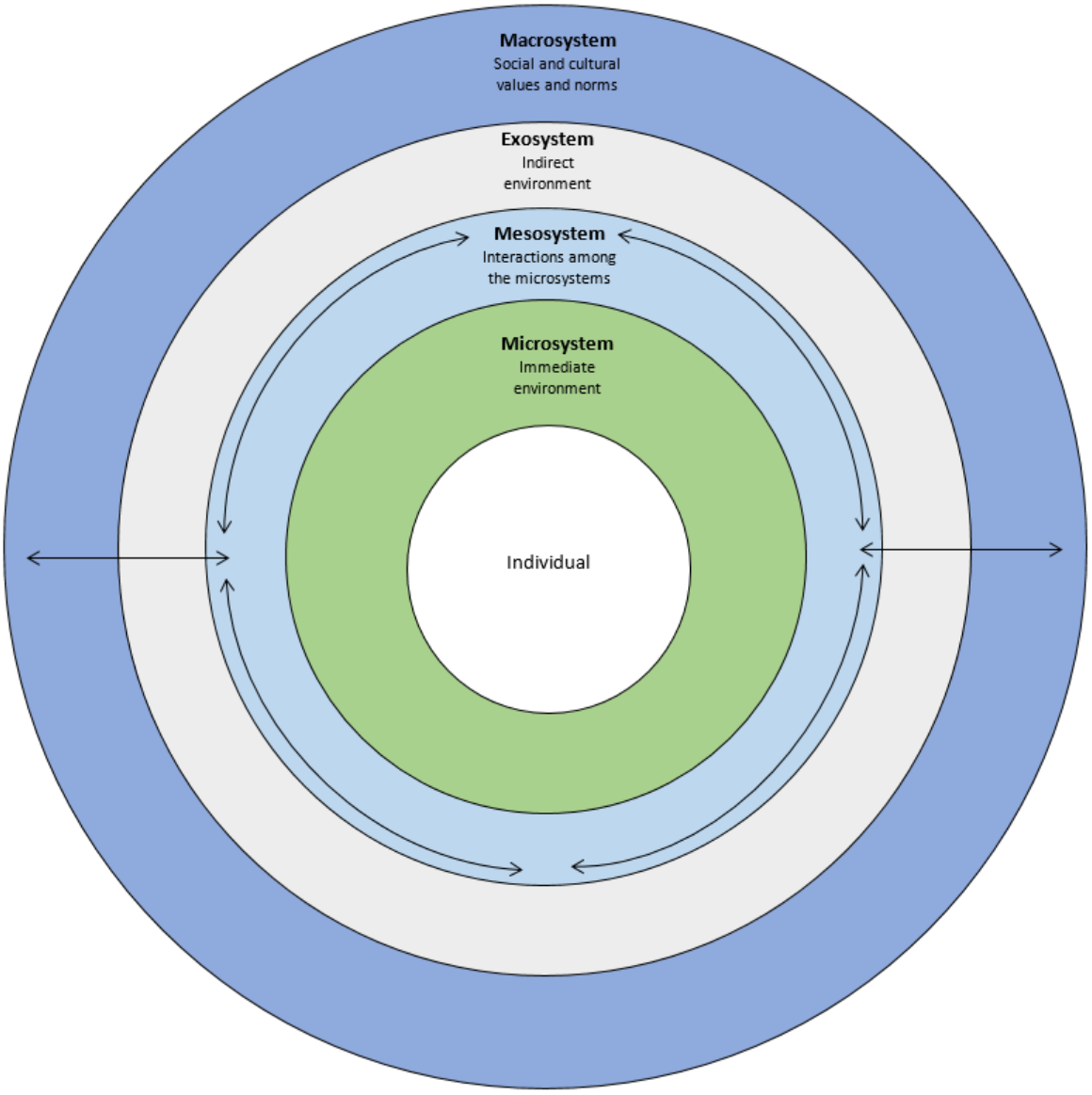

Figure 1. Bronfenbrenner's ecological systems theory (1979).

The ecological model has been used to study teachers' beliefs because factors affecting teachers' beliefs have grown more complex. The growing complexity of researchers' views on teachers' beliefs influenced Woolfolk-Hoy, Davis, and Pape (2006) to organise their review of teachers' knowledge and beliefs from 1996 to 2006 using Bronfenbrenner's (1986) ecological model. Their analysis showed that teachers' knowledge and beliefs are influenced by diverse factors and contexts, which affect the development and enactment of their beliefs, from teachers' immediate context, such as students and classroom, to the bigger context of cultural norms and values. In their conclusion, Woolfolk et al. called for a change in studying teachers' beliefs and knowledge to more holistic way to address "the whole of teachers' mental lives" (p. 730). They encouraged the development of research designs that are more theoretically grounded and evidence based, which can examine the complex beliefs which are shared among a school community or even a broader context.

Drawing from Bronfenbrenner's (1989) work, Buehl and Beck (2015) incorporated the ecological model to describe the relationship between beliefs and practice in "a system of internal and external supports and hindrances" (p. 74). The system of internal and external supports and hindrances of teachers' beliefs and practices can be seen in Figure 2.

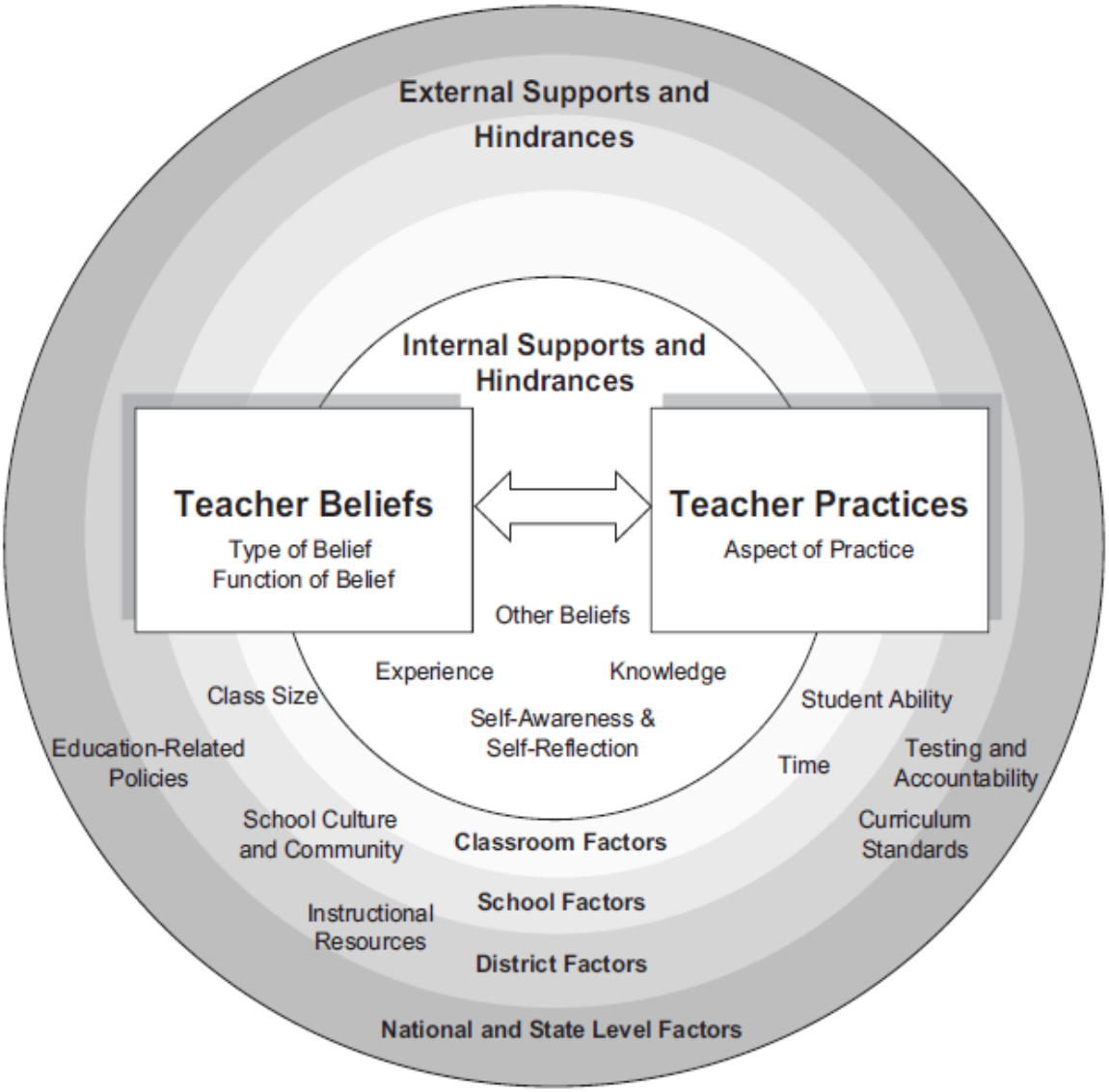

Figure 2. Relationship between teachers' beliefs and practices in a system of internal and external supports and hindrances. Adapted from "The Relationship Between Teachers' Beliefs and Teachers' Practices" by M. M. Buehl and J. S. Beck, in H. Fives and M. G. Gill (Eds.), *International Handbook of Research on Teachers' Beliefs* (p. 74), 2015, New York, NY: Taylor & Francis. Copyright 2015 by Taylor & Francis.

In their review, Buehl and Beck identified internal factors and external factors that might support or impede teachers enacting their beliefs. The internal factors include other beliefs, knowledge, and self-awareness and self-reflection. The external factors cover the first immediate environment—classroom context, then school context, and the national, state, and

district level. Both internal and external factors may interact to influence teachers' practices of their beliefs.

While Buehl and Beck (2015) use the ecological model to analyse the teachers' beliefs and practices in general, I adapt the model to understand teachers' beliefs and practice about CL in particular, in the context of Indonesia. Moreover, I use the model to study the interaction among the layers in the ecological system in influencing teachers' beliefs and practice of CL. Each layer is discussed below in the context of this current study, presented in order from macrosystem to microsystem.

Macrosystem. The macrosystem encompasses general prototypes that exist in cultures and subcultures (Bronfenbrenner, 1979). Bronfenbrenner (1979) states that the macrosystem is the blueprint for a particular culture or subculture that ultimately affects the conditions and processes that occur in the microsystem. Woolfolk-Hoy et al. (2006) reported that preservice and practising teachers might bring to their work underlying preconceptions about diversity in their increasingly multicultural classroom. For instance, having been brought up in well-educated family and exclusive environment, one teacher might overlook the psychological and institutional challenges that his/her marginalised students face (Woolfolk-Hoy et al., 2006). In another study in China, Ng and Rao (2008) reported discrepancies between their beliefs and practice about constructivism in early childhood classrooms. The teachers in the authors' study claimed they were more child-centred than teacher-centred but, in their actual practice, they put more emphasis on practice, impulse control, and academic achievement. Ng and Rao (2008) concluded that Confucian cultures place teachers at the centre of learning which is not in line with constructivist approaches such as giving students the opportunity to explore their interests and goals. This student-centred approach can lead to the student taking more ownership of their own learning and leading their own pedagogical journey.

In the context of my study, the cultural domains that are embedded in the macrosystem that might influence teachers' beliefs about, and practice of, CL include the cultural values of cooperation and consensus decision making, teaching and learning cultures, and traditional influences on Indonesian education.

Culture of cooperation and community consultation. The identity and culture of Indonesian people are complex because of the large number of ethnic groups that inhabit over 18,000 islands which make up the nation. The presence of the multiethnic, multilanguage, multireligious communities among its 265 million citizens makes the study of Indonesian culture a challenging task. However, a number of studies have identified common values held by Indonesians across ethnicities (Magnis-Suseno, 1997). Javanese and Sundanese ethnic groups, which make up more than 50 % of the total population, embrace the concept of social harmony. It can be argued that social harmony is a common national value which has permeated all cultures in the nation (Magnis-Suseno, 1997).

In general, Noesjirwan (1978) conceptualised Indonesian identity as being sociable (maintaining friendly relationships with everyone), and emphasising community rather than the individual. For example, individuals are expected to conform to the wishes of the group and maintain a steady state, a harmonious life style. These conceptualisations were corroborated by Magnis-Suseno (1997) who described Javanese and Sundanese culture as emphasising interpersonal harmony, maintenance of social hierarchies, politeness, and group conformity. French, Pidada, and Victor's (2005) findings confirmed that Indonesians value mutual assistance among members of a community.

As a nation, Indonesia is seen as a family (*kekeluargaan*) or at least as guided by the principles of family life (Magnis-Suseno, 1997). Relevant concepts which fit under this rubric include sharing a burden (gotong royong), consensus decision making (musyawarah), and subordination of the individual to the common unanimous decision (*mufakat*). Gotong

royong, a community-based activity derived from the Javanese village tradition of communal work (Koentjaraningrat, 1978), is believed to be at the very core of Indonesian social identity (Darmaputera, 1988). Similar practices can be found in other areas in Indonesia under different names. For example, in Bali, it is called *subak*, an irrigation system that is done by the Balinese to supply water for their rice fields, with the amount decided through musyawarah among the people. As well, Dayak Ngaju, in Central Kalimantan, has handep, a similar practice of communal work during paddy harvesting and planting, and during celebrations. The practice of gotong royong is mostly seen in rural areas; however, it is still commonly practised among urban Indonesians. In urban areas, communal work is conducted among the neighbours such as keeping the safety of the neighbourhood by having regular patrol system and weekly communal work to clean the environment.

The process of gotong royong involves musyawarah, which emerges as a unanimous decision (Koentjaraningrat, 1978). It is very common to have musyawarah before doing gotong royong. The community holds a meeting to discuss and make decisions concerning the communal work as it involves the interests of the whole community. For example, in doing the community watch, the fathers of each household discuss who will do the shift each day.

Gotong royong and musyawarah are perceived as the push factors to implement CL in Indonesia as these values are aligned with CL elements (Demitra & Sarjoko, 2018; Noel et al., 2006) such as positive interdependence, individual accountability, positive interaction, interpersonal group skills, and group process (D. W. Johnson & Johnson, 2009). The concept of gotong royong guarantees that each individual of the community shares an equal load and responsibility to achieve common social goals. This value is in line with CL elements—positive interdependence, individual accountability and personal responsibility, promotive interaction, and appropriate use of social skills. In CL, students are encouraged to work

together to create a caring, cooperative community to increase achievement and to achieve goals assigned by the teacher. The concept of gotong royong, therefore, is likely to be applied through the CL process in the classroom.

The concept of musyawarah involves the process of doing everything together in order to reach general agreement or the common consent of all community members. This value is reflected in CL elements, promotive interaction and appropriate use of social skills, in which students are motivated to discuss problems to reach a consensus and new understanding. In addition, students are encouraged to learn how to trust and support each other, and resolve conflict constructively (D. W. Johnson & Johnson, 2009). Musyawarah also involves all students (high-, medium-, and low-achieving participants) into group discussions and activities.

Teaching and learning culture. *Guru* in Javanese language is derived from the Javanese phrase *digugu lan ditiru,* which means that a teacher is to be obeyed and to be imitated (Widiyanto, 2005). Gurus are perceived as noble and respected people in society and this perception influences the teacher–student relationship in the classroom. Gurus are perceived as the source of knowledge and the managers of the class. A guru is positioned in the highest hierarchy of the classroom (Hofstede & Hofstede, 2005). Hofstede and Hofstede's (2005) study found that Indonesia scored high in power distance, which means that Indonesia places greater emphasis on hierarchical relationships. The teachers' position in Indonesia seems to contradict constructivist perspectives underlying CL, that is, knowledge begins with the students themselves and within the environment or group (Vygotsky, 1978). With CL, the teachers' roles are to guide, to facilitate, to observe, and to motivate learning (Cohen, 1994). The differences in teachers' multiple roles, however, may create difficulties in restoring harmony between the teacher-centred beliefs and the notion of CL which expects students to self-construct knowledge with the teacher as a facilitator.

Exosystem. The exosystem refers to the distal environment to which an individual is not directly linked but which nonetheless affects him or her (Bronfenbrenner, 1979). In the field of education, the policy makers and curriculum developers might not involve teachers in making decisions about educational policy, yet their decisions impact teachers as the implementers of the policy. In the context of Indonesia, curriculum and national, mandated testing are apparent to influence teachers to practise their beliefs (Agustina, 2017; Azis, 2015). A recent study conducted by Agustina (2017) revealed that the teachers' beliefs about learners' autonomy in learning EFL conflicted with the new curriculum (2013 curriculum) and the high-stakes national exams. Agustina reported that due to insufficient training on the new curriculum, the teachers could not implement learner autonomy, the ability to learn in more active and independent ways, in EFL, as suggested in the curriculum, to achieve the learning objectives. Further, the pressure of national examinations also constrained the teachers. The teachers had to prepare students to pass the exams instead of developing activities to promote learner autonomy. Previous research in the US found similar results to Agustina's study (Hannaway & Hamilton, 2008). Hannaway and Hamilton (2008), in a review, reported that high-stake accountability influenced teacher practice, teachers focused more on the tests than real learning. Likewise, Au (2008) argued that the teachers in the US moved back to more teacher-centred approaches as they taught the students the content required by the tests.

National curriculum. The 2013 curriculum (C 13) is the current curriculum in Indonesia. The objective of the curriculum is creating productive, creative, and innovative through strengthening affective attitudes, skills, and integrated knowledge for Indonesians (MoEC, 2013a). C 13 puts great emphasis on building students' characters, and developing relevant skills based on students' interests and needs (MoEC, 2013a). To achieve the objectives, C 13 promotes the scientific approach to the teaching and learning process. The

scientific approach is an instructional strategy in teaching subject matter. It includes steps that help students to be actively involved in their learning by: 1) observing to identify problems, 2) questioning, 3) experimenting, 4) analysing data, 5) creating, and 6) communicating the results (MoEC, 2014). The MoEC (2014) suggested that the scientific approach should be incorporated into a specific CL model. The scientific approach can thus be regarded as the push factor in the implementation of CL.

The implementation of C 13, however, has been problematic since it was introduced (Retnawati, Arlinwibowo, Wulandari, & Pradani, 2018; Suyanto, 2017). Suyanto (2017) reported that insufficient C 13 socialisation and training were the cause of the problem. The teachers reported that they could not implement the scientific approach due to insufficient training and mentoring on the approach. Through classroom observations, Suyanto (2017) described that during the first step of the scientific approach the teacher did not provide an interesting topic for the students to do observations, thus the students could not come up with critical questions for their experiments. The constraining effects of C 13 were also noted by Retnawati et al. (2018). The teachers in their study argued that the time allocation for teaching and learning in the 2004 curriculum fitted better than C 13. They reported that the material content for teaching physics in C 13 was imbalanced compared to the time allocation.

National examination. The national examination is a standardised test to measure and assess the students' competence in particular subjects at the end of Year 9 (junior secondary) and Year 12 (senior secondary) schooling (Ministry of National Education, 2006). The national examination was initially considered high-stakes testing, meaning that this test was the sole determinant in students' admittance to the higher level of education. However, based on Government Regulation No 13 (2015), the status of national examination was lowered to low-stakes testing and now has different objectives. The current purposes of

national examination are: 1) to provide data to map school and programme quality to determine resources to be given to schools to improve education quality, 2) to consider selection purposes for the next levels of education, and 3) to plan some corrective action and funding schemes to support the improvement of the quality of education at schools and regional levels (Saukah & Cahyono, 2015). The students' graduation will be entirely under the authority of schools based on the students' academic achievement at school rather than an external examination.

The implementation of the national examination and its status, however, cause debates (Cannon, 2015), make final-year teachers' teaching focus remain the same (Saukah & Cahyono, 2015; Sutari, 2017), and raise complaints from students (Madkur & Irwansyah, 2018; Swaragita, 2018). Cannon (2015) reported that the national examination is not aligned with content taught in the school-based curriculum, which focuses on the needs of the students in their local environment. Further, the multiple-choice question format of the national examination does not accurately measure what is taught in the curriculum, as the format does not allow the testing of attitudes and skills. In another study, Saukah and Cahyono (2015) reported that the teachers still consider the national examination as an important test for the students to pass, thus they prepare the students to pass the exams from an early stage of the final year. Similarly, Sutari (2017), who studied junior high school English-subject teachers' perspectives on the national examination, reported that the Year 9 teachers teach to the test by giving students test-taking strategies to prepare for the national examination, and by making the students familiar with the national examination items. Swaragita (2018) and Madkur and Irwansyah (2018) reported that students complained that the test items in the 2018 national examination were very difficult. According to the Federation of Indonesian Teachers Association, as reported by Swaragita (2018), the tests

were not in line with the trial exams the students had been doing to prepare in the months prior to the national examination.

Mesosystem. During a lifespan, people experience multiple ecological transitions which move them into a new and different ecological context which has developmental consequences. For teachers, these transitions might include returning to a teacher's room after teaching three sessions, meeting a principal, attending a workshop in another school. Each move sees a change in the teacher's microsystems and the network of relationships among them, that is, the teacher's mesosystem. The emphasis is on the number and quality of the links existing between two or more microsystems and the encouraging effects they have on the teacher's development. In the context of my study, the mesosystem for a junior secondary school teacher would typically include connections between classroom, school, and regional microsystems. For instance, the transitions include: moving between classes with different kinds of students in them; going from teaching a quiet and less engaged class to an active and more involved class; moving from classroom to school community and environment, such as interacting with colleagues in the teachers' room; and moving from one school to another school to becoming a member of a subject-teacher network. Bronfenbrenner's (1979) conceptual framework would maintain that a rich mesosystem link exists between the microsystems if communication flows are effective and bi-directional, with all parties working together for the benefit of the individual.

Microsystem. Located at the inner core of the ecological model, the microsystem represents the individual's immediate social and physical environment and emphasises the role of proximal process in development. Bronfenbrenner (2005) states that:

> human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects and symbols in its immediate external environment. To be

> effective, the interaction must occur on a fairly regular basis over extended periods of time. (p. 6)

In a teacher's development, such enduring proximal interactions may include activities between the teacher and students, teacher and colleagues in their school, and on subject-teacher discussion forum. However, proximal processes are not only limited to interactions with others, they can also include objects and symbols in a teacher's immediate environment, teacher and classroom, teacher and school, and teacher and PD programmes. In the context of my study, the first immediate environment in a teacher's belief about and practice of CL may include classroom-, school- and regional-institution microsystems. These microsystems are interrelated and influence the teacher's development. Figure 3 depicts the microsystems in which a teacher may be involved.

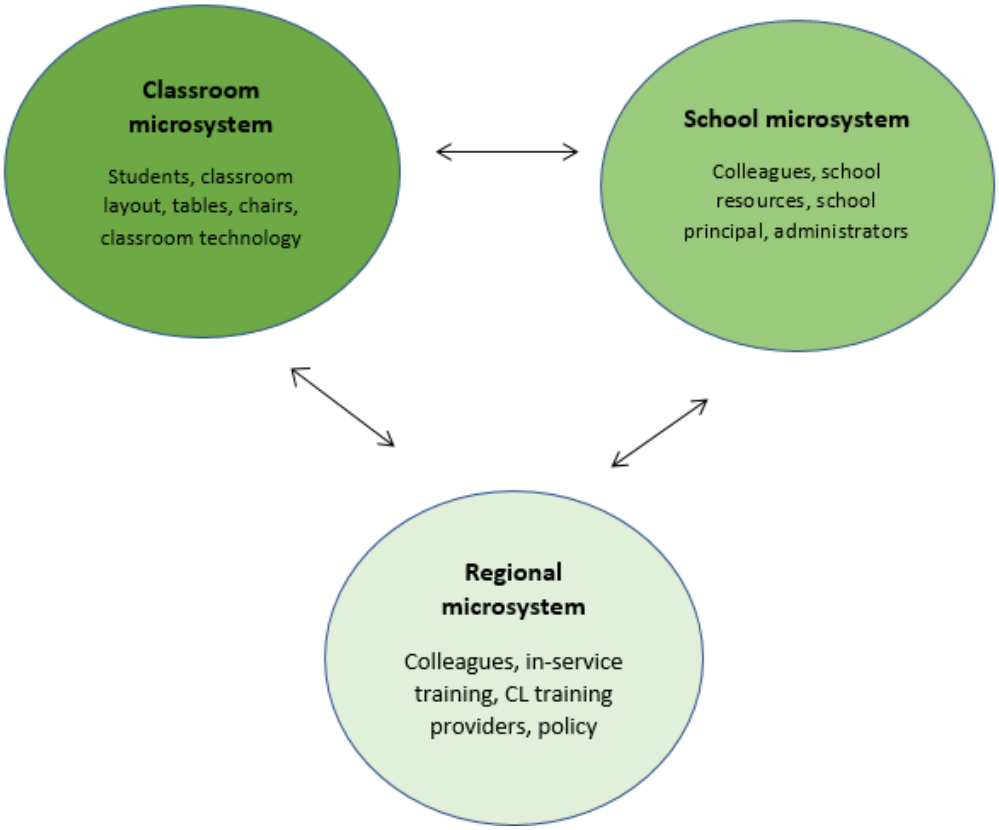

Figure 3. Interactions among the microsystems influencing teachers in practising their beliefs about CL.

Classroom microsystem. Students are one of the immediate connections that teachers make. Students' dispositions and ways of learning influence teachers in implementing CL, as CL requires students to be interdependent and cooperative learners. In East and Southeast Asian countries such as Indonesia, teacher-centred instruction influences how students learn. As teachers do the talking and control most of the activities, students only listen to the teachers' instructions. Western teachers teaching in China reported that their students did not talk much during discussions (Jin & Cortazzi, 1998). The students usually asked questions when the class was almost over. In addition, the students' attitude towards learning was nurtured in their previous classrooms with their native teachers. Likewise, Dahlin and Watkins (2000) stated that students from East Asia are rote learners, that is learners who study mostly by memorising. Such students memorise in order to gain a deeper understanding of the material and discover new meaning, while Western students repeat to make sure that they remember something (Dahlin & Watkins, 2000). Gow and Kember (1993), in their study of a sample of 1,043 Hong Kong tertiary students, identified an approach that they called a "narrow approach" (p. 356) for which the students attempted to both memorise and understand. The students systematically working on the material section-by-section, attempting to first understand and then memorise what they had learned, characterised the approach.

In CL, students are encouraged to convey ideas in order to solve problems to achieve group success (D. W. Johnson & Johnson, 1992). Differences in opinion are perceived as giving opportunities for productive discussions, and disagreement and conflict are shown but not designed to hurt personal feelings. However, Asian students would avoid such conflict to maintain a harmonious group (Trompenaars & Hampden-Turner, 1998). Different thoughts and opinions may not be seen as the start of empowerment but instead as a threat to group harmony (Leung & Bond, 1998). Therefore, to keep up concordant group harmony and

maintain a strategic distance from the loss of face, when clashes happen, Asian students are liable to give roundabout reactions, for example, evading the subject or reflecting greater sympathy towards others' interests rather than their own (Kirkbride, Tang, & Westwood, 1991; Tse, Francis, & Walls, 1994). The principle of conflict avoidance is also evident in Indonesia, particularly Javanese society (Magnis-Suseno, 1997). To be able to establish and maintain social harmony, *rukun*, translated as "to feel oneself in a state of harmony" (Magnis-Suseno, 1997, p. 42), should be upheld and practised in Javanese life. Magnis-Suseno further described rukun as:

> marked by cooperation, mutual acceptance, calm and unity. Rukun is the ideal situation that Javanese wish to see prevail in all relationships, in the family, the neighbourhood, and the village. The entire society should be determined by the spirit of rukun. (p. 43)

Rukun in the Javanese classroom is a state in which every student is expected to respect, to interact peacefully with each other, and to avoid potential division. In sum, in the context of Eastern cultures, it is thus recognised that the imposition of a Western model of student learning such as CL might not work for Asian students.

Evidence proves that classroom physical environment influences teachers in implementing instructional models (Amedeo & Dyck, 2003; Park & Choi, 2014). Park and Choi (2014) found that the Korean traditional classroom (tables lined up in rows facing the whiteboard) resulted in learning discrimination and less student interaction. Further, the students in their study, who experienced both traditional and active learning classrooms, responded that the traditional classroom was more suitable for memorising facts and theory-based course work while an active learning classroom allowed the students to conduct discussions, challenge opinions, apply theories into practice, and analyse concepts, facts and experiences. In a different study, Amedeo and Dyck (2003) reported that the choice of five

classroom layouts, either shallow rectangle (A), deep rectangle (B), T-shape (C), fat-L shaped (D), and crossed shape (E) impacted on their use of group work. The teachers perceived that Types A and B were "boring," had "no areas for small-group instruction," and were "set up for teacher-directed" learning (p. 333). In contrast to Types A and B, the teachers in Amedeo and Dyck's (2003) study perceived that Types C, D, and E were more suitable for group work.

Similar to Amedeo and Dyck's (2003) study, Istiqoma and Prihatmi (2018) studied three different classroom layouts to see the influences of the layouts on students' English test scores for the four skills: listening, speaking, reading, and writing. The three layouts were 1) traditional classroom (rows), 2) U-shape, and 3) team-shape (tables and chairs are arranged for small teamwork). The findings reveal that team-shape layout was the most effective layout to increase students' English score compared to traditional-classroom and U-shape layouts. However, Istiqoma and Prihatmi (2018) did not report how each layout contributed to an improvement in the students' English score improvement.

In summary, the findings of the aforementioned studies suggested that specific instructional models require a specific classroom layout to achieve the learning objectives. When the model requires students to work in groups, the classroom layout should be able to accommodate the students' needs to interact with each other.

School and regional microsystems. The school community, such as colleagues, the principal, and teacher supervisors have an important role in influencing teachers to practise their beliefs about constructivist or cooperative forms of learning such as CL. Professional communication among teachers who are engaged in efforts to reform their teaching is encouraged (Garet, Porter, Desimone, Birman, & Yoon, 2001; Tschannen-Moran, Salloum, & Goddard, 2015). In a recent study, Tschannen-Moran et al. (2015) pointed out that teachers' beliefs were not isolated, they were shaped by interactions with others in the

environment in which they were involved. Tschannen-Moran et al. argued that schools are organisations where the teachers work interactively with other teachers, students, and administrators affect teachers' beliefs and instructional activities. In earlier research, Garet et al. (2001) found that collective participation of groups from the same school and subject, with the support of coherent professional development, encouraged teachers to change their teaching practice. They suggested that ongoing discussion among teachers and high-quality professional development was necessary to improve teaching. In studies of teachers' beliefs about CL, Lumpe et al. (1998) and Abrami et al. (2004) similarly report that collegial support and quality of CL training determined the success of the implementation of CL. Lumpe et al. (1998) and Abrami et al. (2004) suggested that long-term or continuous professional development in CL and positive school culture were needed for the success of CL implementation.

In Indonesia, CL professional development for in-service teachers is conducted by teaching universities (Petuguran, 2015), international donors (Noel et al., 2006), and private institutions (Harjanto, Lie, Wihardini, Pryor, & Wilson, 2018). However, little research about CL professional development has been reported. The existing research reported that CL was not workshopped exclusively as a pedagogical approach. CL was introduced to the educators with other connected pedagogical theories. Noel et al. (2006), whose study was funded by the US Department of State, introduced CL and conflict-resolution education to a small group of Indonesian teachers who would teach their colleagues the materials of the workshop in their schools. The objective of the study was to use CL for peer mediation in student-based conflicts, particularly bullying. In the first session, the workshop introduced theories of CL and its implications, focusing on how CL might contradict and complement traditional teaching structures, how it is different from traditional group work, and how CL could be used alongside the national curriculum. On the second session, the teachers were

taught how to compose CL groups and manage the groups, select and focus on communication skills, and assess group work. The teachers then returned to their regions and disseminated the workshop to their colleagues, focusing on the Jigsaw structure and conflict resolution. Several months after the workshop, the teachers reported that CL was well received and they had successfully implemented Jigsaw, but they reported that they had problems with "the classroom size and the ability to control the number of learning groups" (Noel et al., 2006, p. 439). However, Noel et al. did not report if they conducted classroom observations or follow-up supervision.

In another study, funded by Tanoto Foundation (a philanthropic organisation), Harjanto et al. (2018) focused on how the foundation designed and implemented their teacher quality improvement programmes for in-service teachers in remote schools in Indonesia. The programmes, referred as to Active, Innovative, Creative, Effective, and Pleasant Learning (AICEPL), were aimed at enhancing teachers' capacity to implement student-centred approaches. The programme's modules included developing contextual teaching and learning, higher order thinking, problem solving, CL, creating a learning environment that motivates students to learn, teaching preparation and practices, and action planning. A total of 193 teachers and 64 school principals from three provinces were trained with the programme's modules. The principals were involved because they would supervise the application of the AICEPL. After the training, 192 teachers and 61 principals participating in the training were included in a self-administered survey to find out the participants' knowledge of student active learning. At the time of the survey, 193 teachers were interviewed about their knowledge of student active learning, and 177 of the interviewed teachers were observed in a 1-hour lesson. The observed teachers were then interviewed after the classroom observation to verify what happened in the classroom. The students of the observed classrooms were given a guided self-administered survey to find out the practice

of active learning in the classroom. The findings of the teacher interviews, classroom observations, and student survey revealed that the teachers had applied student active learning as indicated by student behaviours such as asking questions and the practice of working in groups, yet it was apparent the dominant learning process in the classroom was teacher-directed rather than student-initiated. Harjanto et al. (2018) argued that there were two factors hindering the teachers from applying CL and active learning activities: 1) teachers' misinterpretation of the theory or their own inconsistencies, and 2) pre-training experiences or teaching context influences. These findings were in contrast to the principals' survey. The principals, being responsible for professional development programme supervision, rated the teachers' implementation of the programmes higher than the researchers and the students. The findings indicated two possibilities: the principals might not fully understand the concept of AICEPL so they could not identify the factors to be improved; or the principals might not have used the supervision methods properly (Harjanto et al., 2018). In summary, Harjanto et al.'s (2018) and Noel et al.'s (2006) studies showed that colleagues, school principals, and CL professional development had important roles in introducing and disseminating CL, and the quality of the implementation of CL.

Chapter Summary

In this chapter, I have reviewed and discussed literature regarding CL and teachers' beliefs about CL, and how teachers' beliefs impact on the enactment of CL in classrooms. It appears that teachers' beliefs about CL in the context of Indonesia are complex and impacted by a number of factors including the Indonesian culture of cooperation, the teaching and learning culture, national curriculum and examination, classroom and school environment, as well as regional context. To understand the complexity of Indonesian teachers' beliefs about CL, I employed an ecological model (Bronfenbrenner, 1979). The ecological model enabled me to study the factors influencing teachers' beliefs and the practice of their beliefs regarding

CL. It also enabled me to study the interactions between the systems in the ecological model. To examine the teachers' beliefs about CL and how their beliefs are practised, I present the methodology of the study in the next chapter.

Chapter Three: Methodology

In this chapter I describe the methodology for the investigation of Indonesian junior secondary school teachers' beliefs and practices regarding CL. The current study was qualitative in nature, and it employed an interpretative paradigm to understand teachers' beliefs and practices concerning CL. The justifications for using the interpretative paradigm and the study design will be presented. Further, an explanation of how the study participants were selected will be followed by an overview of data collection and data analysis. Finally, I will discuss how to ensure the trustworthiness of the study and the ethical considerations pertinent to the study.

Interpretative Paradigm

Social reality can be viewed from different dimensions such as objectivism and subjectivism (Cohen, Manion, & Morrison, 2011). Within these dimensions, social realities are interpreted from diverse perspectives such as ontology and epistemology. Ontology is the nature of reality and is concerned with identifying the overall nature of existence of a particular phenomenon (Hudson & Ozanne, 1988). When researchers seek answers (reality) to their research questions, they refer to a particular type of knowledge that exists external to the researchers. From an ontological perspective, within objectivism, the world exists and is understandable as it really is. Therefore, social reality is external and independent of individuals (Hudson & Ozanne, 1988). On the other hand, within subjectivism, the world exists, but different people interpret it in different ways (Cohen et al., 2011). In other words, reality is socially constructed knowledge that is developed and maintained in social situations (Hudson & Ozanne, 1988). Lincoln and Guba (1985) stated that reality is made up of systems that depend on other systems for their meaning. Thus, it is important for researchers

to know the context of a behaviour or event because social beings construct reality and give it meaning based on context (Lincoln & Guba, 1985).

Epistemology is the study of knowledge: how researchers go about uncovering knowledge that is external to researchers and learn about a reality (Hudson & Ozanne, 1988), in this case the teachers and schools in my study. Epistemology is how researchers see the world around them; thus, it is internal to the researchers. From an epistemological perspective, positivism is part of the objectivist stance whereas interpretivism is a school of thought within subjectivism (Cohen et al., 2011; Hudson & Ozanne, 1988). The study of human behaviour from a positivist stance is fraught with challenges due to the complexity of human nature and behaviours. In contrast, researchers who employ interpretivism (an alternative stance to positivism), perceive that people do not only construct the world in many distinct manners, but that they also assign different meanings to their actions to make sense of their behaviour (Cohen et al., 2011). For interpretivists, reality is socially constructed (Merriam, 1998). Interpretivism focuses on individuals and aims to understand their interpretations of their world (Merriam, 1998; Thomas, 2011). There are, therefore, multiple mental conceptions of reality to be understood.

In this current study, I subscribe to a subjective ontological position. I believe that the teachers in my study have their own thoughts, interpretations, and meanings about the world. Epistemologically, I regard interpretivism as the most appropriate approach for this study because I attempted to understand and interpret teachers' beliefs about and practice of CL. An interpretive approach helps me to identify the different conceptions of CL held by teachers. These conceptions support the construction of a more complete picture of the phenomena as a whole (Hudson & Ozanne, 1988). In order to develop a deeper understanding of the practice of CL, I developed a case study design, using the qualitative tradition of inquiry. Qualitative case study helps researchers understand and explain the

meaning of social phenomena with as little disruption of the natural setting as possible (Merriam, 1998). Case study design is further explained, below.

A Case Study Design

The case study has been described as "the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances" (Stake, 1995, p. xi). Simons (2009) stated that the "case study is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, programme or system in a 'real-life' context" (p. 21). More specifically, Merriam (1998) defines a qualitative case study as "an intensive, holistic description and analysis of a single instance, phenomenon, or social unit" (p. 27). Thus, a qualitative case study has been described as offering more profound information and different insights into a phenomenon.

Case studies have been categorised in different ways. For instance, Stake (2003) classified cases as intrinsic or instrumental case studies. The case is studied because of "an intrinsic interest" of the researcher (p. 137). An instrumental case study aims "to provide insight into an issue or to redraw a generalization." (p. 137). From Stake's viewpoint, the current study would be both an intrinsic and instrumental case. This study was guided by my own interest and experience as a student, teacher, and researcher myself who wanted to understand Indonesian teachers' beliefs about CL. It is an instrumental case because it attempted to gain insight into a particular issue: the practice of CL of the case study teachers.

Since a case study approach enables researchers to comprehend individual or group perceptions of events, the approach was deemed appropriate for developing an understanding of teachers' beliefs of CL. Moreover, as case studies explore either one case or a small number of cases in depth and study the occurring phenomenon (Merriam, 1998; Stake, 1995), a case study design was considered suitable for the in-depth study of the practice of CL of the case study teachers in their classrooms. Thomas (2011) stated that case studies aim to

identify relationships. Thomas' (2011) view is central to this study because the intention was to increase understanding of the relationship between teachers' beliefs about CL and the practice of CL in their classrooms.

Data Collection: An Overview

An important characteristic of case studies is the use of multiple data collection methods for their construction (Denzin & Lincoln, 2008; Merriam, 1998; Thomas, 2011). The current study was constructed using five different data collection methods that were selected to obtain rich information about the focus of the study. Combining interviews, classroom observations, post-observation interviews and field notes as primary data collection sources, and documents as a secondary data source (see Flick, 2009), has been essential for increasing understanding of teachers' beliefs and practice of CL. In this section, I present an overview of the data collection in general. I used interviews in Phase 1 to understand and interpret teachers' beliefs about CL, and I employed classroom observations, post-observation interviews and field notes in Phase 2 to investigate whether the cases enacted their beliefs of CL and to study how CL was implemented in the classroom. To support and validate the findings of the study, documents were collected through Phase 1 and Phase 2. Each data source is discussed in greater detail in the following two chapters.

The data collection procedures are described below (see Table 1).

Table 1

Data Collection of Phase 1 and Phase 2

	Data collection	Secondary data collection	Number of participants
Phase 1	Interviews	Field notes Documents	18 teachers
Phase 2	Classroom observations Post-observation interviews Field notes	Documents	4 cases (selected from 18 teachers in Phase 1)

Interviews. The purpose of interviews is to allow the interviewees to discuss their interpretation of the world they are in, their opinions, thoughts, and experiences from their own points of view (Cohen et al., 2011). In the current study, through interviews with the teachers, I attempted to understand and interpret teachers' perspectives, conceptions, and experiences of CL in the teachers' situation and context. I employed individual interviews because they enabled me to meet the teachers in a direct interview to seek comprehensive, detailed and contextual information in relation to the individual teacher's beliefs of CL (see Charmaz, 2006). Semi-structured interviews were employed since I wanted to have rich and in-depth answers from the participants about their beliefs, perceptions, knowledge, opinions, and the application of CL in the participants' classrooms (see Wisker, 2008).

Classroom observations. The main purpose of observations is to produce data that describe the situations occurring in the fieldwork to the readers (Patton, 2015). A characteristic of observations relevant to this interpretative case study is that observations not only aim to describe the setting, activities and people involved, but also the meaning of what was observed from the perspective of those observed (Patton, 2015). Therefore, observations help researchers to obtain a deeper understanding of the case (Stake, 1995). The observations of actual practice of CL were essential in this study since the observations, particularly in each teacher's classroom, allowed me to collect first-hand information about the teacher's usual educational context (see Merriam, 1998), and to understand the relationship between the teacher's espoused and enacted beliefs (see Stake, 1995). The classroom observations were video recorded, enabling the production of important records of researched events that could be analysed to expand interpretations (see Stake, 1995).

Post-observation interviews. Post-observation interviews were conducted after the classroom observations. Speer (2005) suggested that the lack of shared understanding about specific terminology between teachers and researchers would produce data that might not

accurately represent teachers' beliefs or practice and eventually would yield insignificant findings and conclusions. The post-observation interviews, therefore, were aimed at clarifying specific issues that emerged during classroom observations and generating shared understandings of the terms and descriptions that the teachers used in their teachings. I also confirmed or amended my interpretations.

Field notes. Emerson, Fretz, and Shaw (2011) stated that field notes are used by researchers to record the experiences of the observer. The field notes in this study were used as a record of my insights about significant events during Phase 1 interviews, classroom observations, and post-observation interviews. The meaning of experiences can only be conveyed by those who are going through the actual experiences (Lincoln & Guba, 1985). For instance, as I was observing the school, my personal feeling or response to an action or event could be expressed in the field notes and later addressed in the analysis of the data as subjective information that might inform the findings. These interpretations were grounded in the CL literature and my understanding of the Indonesian school context.

Documents. Documents are an essential source of data that assist researchers in corroborating other data sources and are used in case study research (Merriam, 1998). Case study research uses documents as part of the triangulation process, which is integral to establishing trustworthiness in the dissemination of the data (Stake, 2005). Further advocating for the value of using documents in data collection, Flick (2009) suggested that researchers use documents as a strategy to support other methods. In this study, I used documents such as case teachers' lesson plans, assessments and curriculum, as secondary data to support my interpretation of the interview, classroom observation, post-observation interview and field note data.

Data Analysis: An Overview

The development of case studies involves some significant challenges such as being able to manage the large amount of data that an in-depth study produces, identifying the interaction between the different dimensions of the case, and describing it in detail to illustrate its complexity (Creswell, 2012). The challenges faced in this study were overcome through a cyclical and interactive process of managing and organising data once the first data were gathered, transcribing and preliminarily reading through the database, coding and organising themes, displaying data, and interpreting data (see Creswell, 2018; Miles, Huberman, & Saldaña, 2014; Figure 4).

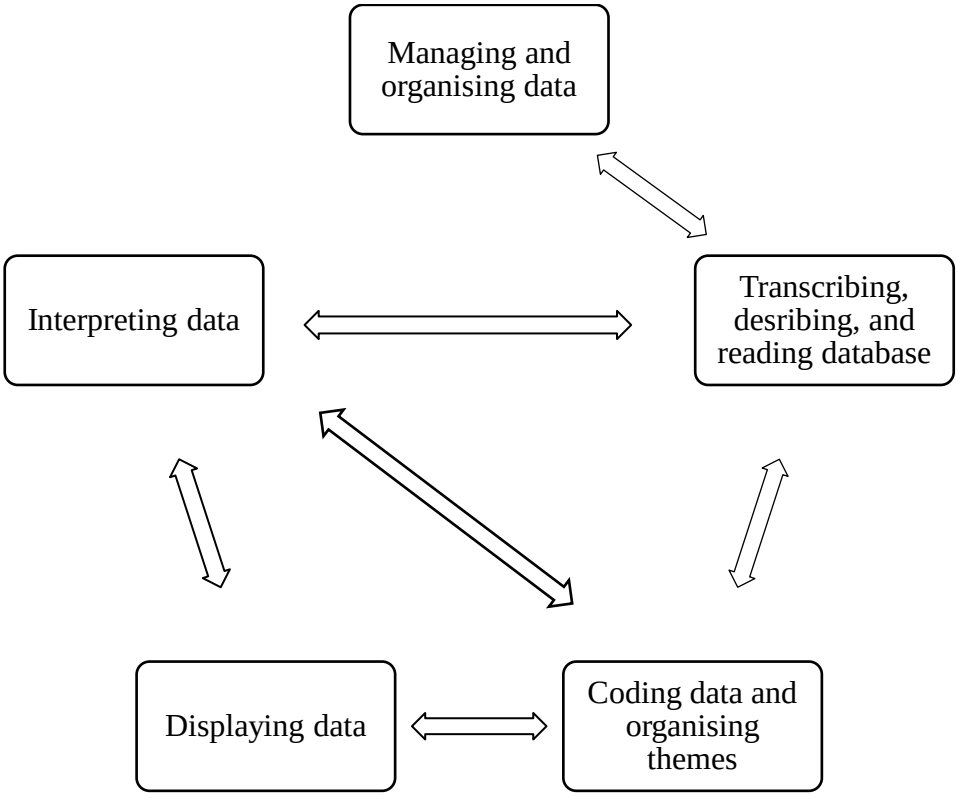

Figure 4. The cyclical and interactive process of data analysis.

Data from interviews and post-observation interviews were managed, organised, and transcribed verbatim. Data from video recording classroom observations were watched and described. Data from field notes were managed and typed in a Word document. The

database of the multiple sources, then, was preliminarily read through before coding began. Codes and categories were constructed to search for themes. Data were displayed through matrices and networks. The last procedure was interpreting the data. When interpreting and presenting the data, I checked, confirmed, and verified my interpretations against the data and the four cases, when possible. A detailed description of data analysis of Phase 1 is presented in Chapter 4 and Phase 2 is presented in Chapter 5.

Phase 1 data analysis. The interview data were analysed using a thematic analysis (Braun & Clarke, 2006). Thematic analysis was employed to identify, analyse and report themes within data due to the rich nature of data collected from the interviews (Braun & Clarke, 2006). I used an inductive and data-driven approach. I focused on identifying and discussing the salient themes that were repeated across and within interview transcripts. The data analysis started when the audio-recorded interviews of 18 teachers were transcribed and reviewed several times to gain a full understanding of the interviewees' answers pertaining to the research questions. I used NVivo software to manage the data and record initially constructed codes. The initial coding was intended to explore interesting features of the data to represent chunks of interview transcripts (see Miles et al., 2014). The codes and subcodes were added as the coding progressed. Thirty-three constructed codes emerged from 183 interview transcript data from 18 teacher interviews, which were then collated into three overarching themes. Themes were then reviewed for how they related to the teachers' beliefs about CL.

Phase 2 data analysis. Phase 2 data included each case's interview data—collected in Phase 1—classroom observations, post-observation interviews, and field notes. Miles et al.'s (2014) framework was used to analyse data within each case. The framework offered me a practical yet analytical process of generating themes from multiple data sources. It also helped me to present the data analysis as the framework emphasised data display (Miles et

al., 2014). Two processes of coding were conducted to reveal categories and themes from texts (see Miles et al., 2014). The constructed categories from interview data were matched with constructed categories from classroom observations, post-observation interviews, and field notes to search for themes. Figure 5 summarises the process of the study.

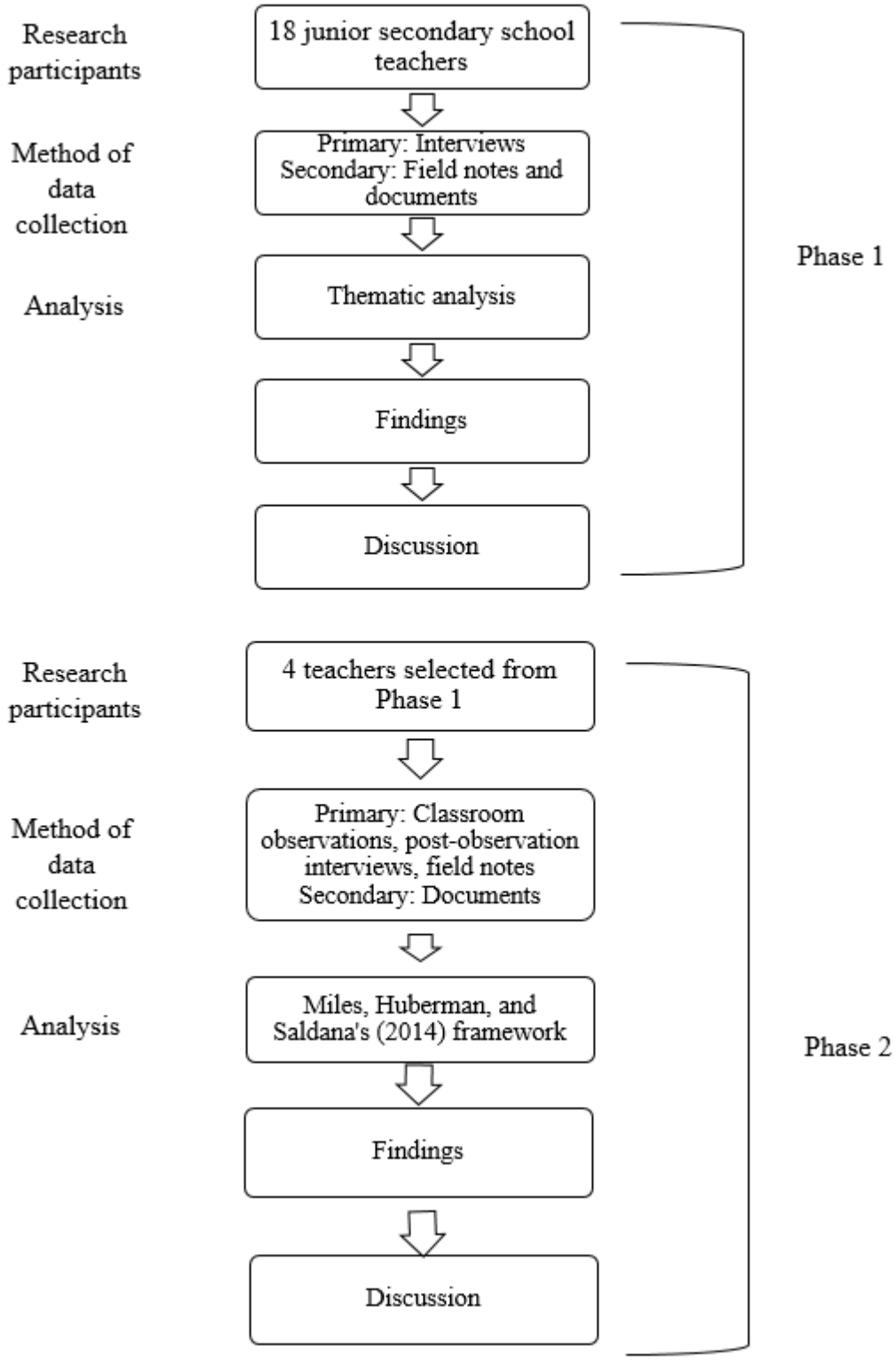

Figure 5. The process of the study.

Context and Participants: An Overview

The study was conducted in Semarang, Central Java, Indonesia. Semarang was chosen because training and workshops for CL have been conducted for junior secondary school teachers by a local university (Petuguran, 2015) and international donors ("RELO-Unnes Dorong Kompetensi Guru," 2012). In addition, a number of CL studies have been conducted in Semarang junior secondary schools (Hertiavi, Langlang, & Khanafiyah, 2010; Indriyani, 2011). Thus, Semarang junior secondary school teachers are likely to be familiar with CL.

The selection of cases for inclusion in this current study was based on the representativeness of the case, and how well the case met the selection criteria (see Stake, 1995). Stake (2005) suggested that a case study researcher choose a case from which she/he feels able to learn most. In addition, Stake (2006) stated that when the selection of cases is tailored to fit the needs of the investigation and to generate an in-depth appreciation for the experience, purposeful sampling is appropriate; it was, therefore, the method of the participant selection for the current study.

Two phases of the current multiple case study were conducted. The first purpose of Phase 1 was to understand and interpret teachers' beliefs about CL. The second purpose was to select the case study teachers for Phase 2 of the study. The 18 teachers were purposefully selected (Patton, 2015). I selected the teachers who had attended CL professional development and had applied CL in their classrooms for at least a year. The selection of the cases was important because I wanted those cases from which I could learn the most with regard to their beliefs about CL (see Stake, 2005). Phase 2 was conducted to investigate the teachers' beliefs and the practice of their beliefs regarding CL. I used purposive sampling to select four cases of 18 teachers participating in Phase 1, who frequently implemented CL, showed enthusiasm about practising CL, and were willing to undertake professional

development throughout the research project. As indicated by Creswell (2013), researchers typically limit the number of cases to no greater than four or five representative cases to allow for in-depth analysis and understanding of each case. Four junior secondary school teachers fitting the delimitations in place for the study were identified through Phase 1 of the study.

Ensuring Trustworthiness

In qualitative research, Lincoln and Guba (1985) described the need for credibility, transferability, dependability, and confirmability to establish trustworthiness. Trustworthiness in case study research demonstrates that the data are comprehensive and explanations of the findings are rigorous (Lincoln & Guba, 1985). Trustworthiness demonstrates rigor in a qualitative design so that the readers can better understand the findings and have confidence in the results being presented (Miles et al., 2014). Trustworthiness thus acts as an assurance of integrity on the part of the researcher and researcher and of whether the researcher has disclosed all the procedures used in the study

Credibility requires data triangulation, member check, persistent observations, and the researcher's presence in the site for sufficient time to conduct the research (Lincoln & Guba, 1985). Triangulation in qualitative study involves using multiple data sources to investigate a phenomenon (Lincoln & Guba, 1985). In the current study, triangulation occurred through the collection of data from interviews, classroom observations, post-observation interviews, field notes, and documents. In addition to using multiple data sources to establish credibility, I used member checking to increase the credibility of study findings. Member checking is a concept defined by Guba (1981) as involving research participants from whom the original information was collected. Doyle (2007) claimed that member checking is one of the most significant methods in qualitative research for strengthening research credibility. In this current study, I gave the participating teachers the opportunity to confirm or challenge the

transcriptions of the interviews of Phase 1 and post-observation interviews of Phase 2, as well the classroom observation descriptions in Phase 2. The participants were informed in the participant information sheet that all transcripts would be returned for feedback and clarification. Three of the 18 teachers in Phase 1 took the opportunity to make changes. The teachers' corrections were minor in nature and did not substantively change my representation of the data. The four teachers selected in Phase 2 agreed with the content of the post-observation interview transcript and the descriptions of the classroom observations.

Transferability refers to the extent to which the findings can be transferred to another context (Lincoln & Guba, 1985). Transferability can be established through thick description and purposeful sampling (Patton, 2015). Thick description of the study context, participants, and design provides the readers with complete information so that the readers can make their own determinations about transferability (Lincoln & Guba, 1985). Research participants who are selected through purposeful sampling represent the research design, thus the readers can evaluate the degree of transferability to their own context (Lincoln & Guba, 1985). In this current study, I attempted to establish transferability through providing the readers with a full description of the context (the historical context influencing Indonesian education, the education system, teachers' in-service training, the setting and the culture of the people, etc.) and my participants' information (length of experience, experience in implementing CL, school, etc.) to allow readers to develop a proper understanding of the phenomena. In addition, I used purposeful sampling in selecting the participants in the two phases of the study (Patton, 2015). These participants were selected based on their experience of the central phenomenon.

Dependability refers to the stability of the research findings over time (Lincoln & Guba, 1985). Dependability concerns the quality of the data collection and analysis. The issue is addressed through a clear explanation of the methods used. In this current study, the

overview of data collection and analysis is presented in this chapter. The Phase 1 data and their analysis procedures are presented and discussed in detail in Chapter 4. Chapter 5 describes and discusses Phase 2 data and their analysis thoroughly and carefully to establish dependability. In addition, throughout the study for the last 2 years I have been peer debriefing with colleagues and my three university supervisors.

Finally, trustworthiness of this study is established through confirmability, which refers to how well the findings are supported by the data collected and the analysis procedures that are used to establish findings (Guba, 1981; Lincoln & Guba, 1985; Miles et al., 2014). The confirmability can be established through triangulation and credibility, as mentioned above (see Guba, 1981). In this study, I also engaged in ongoing peer debriefing with colleagues to review interview transcripts, field notes, codes, and to challenge the research designs and my interpretation of the data with my three supervisors.

Ethical Considerations

Trustworthiness is met with the establishment of ethical standards which the researcher follows while collecting and analysing data for a study (Creswell, 2013; Denzin & Lincoln, 2008). Ethical approval for this study was received from the University of Auckland Human Participants Ethics Committee (Ref. 017950) on 4 October 2016. The process of gaining the research permission for this study in Indonesia involved three institutions. First, permission was sought from the National and Political Unitary Agency of Semarang City, Central Java. The recommendation letter was issued on 28 November 2016. Second, with the recommendation letter from the National and Political Unitary Agency, the head of the Semarang Education Board issued a recommendation letter, on 28 November 2016, for me to conduct research in Semarang junior secondary schools. Third, permission was sought from three junior secondary school principals to invite and approach teachers as participants of the study.

Informed consent. Formal consent was sought from three school principals. I did this by presenting the study aims, project procedures, methods, the significance of the study and the ethical issues involved. A formal information letter sought each principal's written consent. After gaining the principals' consent, I approached the teachers through emails, text messages, or telephone calls. I arranged a meeting to discuss my study. Twenty-four teachers were invited, 18 teachers were willing to participate. I gave each of them the participant information sheet (PIS; see Appendix A) and explained the research process of interviews and sought the teacher participants' consent via a consent form (CF; see Appendix B). Teachers were able to withdraw their data from the study by a given date if they changed their minds. Four participants for Phase 2 data were selected and invited to participate in Phase 2 of the study. I gave the PIS and CF to the four selected teachers and explained the research process of classroom observations and post-observation interviews. The four teachers all provided their written consent.

Since classroom observations were video recorded, I could not guarantee that the students, who were under 16 years old, would not be in the video. Thus, a letter, along with a PIS and CF, explaining the aims, the process of the study, and confidentiality aspects in simple terms, was sent home with the students with a consent slip for their parents/caregivers. Prior to sending the letter to the parents/caregivers, I explained the classroom observations to the students and gave the students a PIS (see Appendix C), and I sought their assent through an assent form (AF; see Appendix D). Both forms needed signing before a student could participate in classroom observations. All students provided their assent. It was made explicit to both students and their parents/caregivers that participation in the study was voluntary, and that participation or non-participation would not affect the students' relationship with their school in any way.

Since English is a foreign language in Indonesia, the PIS, CF, and AF were translated into Indonesian to avoid misunderstanding the information. Indonesian is the national language of Indonesia. However, school principals, teacher participants, parents/caregivers, and students received the PIS, CF, and AF in both English and Indonesian.

Confidentiality. The teachers in the interviews were not anonymous. The interviews were used to select the cases in Phase 2 of the study; thus, names were needed. However, the preservation of confidentiality was paramount. Any aspects that might identify the teachers have been altered in the thesis and for any publications and presentations, and no details used that could identify them. Information about the school and teachers has been disguised, and participants' confidentiality protected by using pseudonyms.

Chapter Summary

The methodology of the study has been presented in this chapter. The study used an interpretative-qualitative methodology using a multiple case study approach. Two phases comprised teacher interviews, classroom observations, post-observation interviews, and field notes to investigate teachers' beliefs about CL and the practice of their beliefs. Documents were examined to support and validate findings. Eighteen participants were purposefully selected in Phase 1. Phase 2 of the study investigated the practice of CL of four cases. An overview of data analysis in Phase 1 and Phase 2 has been presented. In the next chapter I will discuss Phase 1 data collection and analysis in detail, followed by the presentation of the findings and discussion.

Chapter Four: Phase 1

The purpose of Phase 1 is to answer the main research question: "What are Indonesian teachers' beliefs regarding CL?" and sub-research question "To what extent do the Indonesian values gotong royong and musyawarah influence their beliefs?" In this chapter, I describe the contexts and the participants, data collection methods, and the data analysis. I present the themes generated from the data to answer the research questions in the findings section, followed by the discussion.

Context

This study was conducted in Semarang, Central Java, Indonesia. Semarang City, with a population of approximately two million, is the seventh largest city in Indonesia after Jakarta, Surabaya, Bandung, Bekasi, Medan, and Tangerang. The largest ethnicity in Semarang is Javanese followed by minorities such as Chinese, Indian, and Arabic (Titiek, 2012). Javanese is also the most predominant ethnic group in Indonesia (Magnis-Suseno, 1997). Javanese people embrace the concept of rukun, which is the idea of harmony as a result of active orientation towards mutual respect and adjustment to each other (Magnis-Suseno, 1997). Magnis-Suseno (1997) described Javanese culture as emphasising interpersonal harmony, maintenance of social hierarchies, politeness, and group conformity.

The concept of rukun is expressed in the practices of gotong royong and musyawarah (Magnis-Suseno, 1997). For example, in building a *pos kamling* (security post), a small room used as a security post in the neighbourhood that belongs to the community, the community conducted a meeting. The meeting is usually conducted in the house of the head of the neighbourhood, to discuss the budget, the people in charge, the execution, and so on. This kind of discussion is called musyawarah as it involves community's agreement on the project.

Gotong royong is a common practice in Semarang, Central Java. As a resident of Semarang, I have been very familiar with gotong royong work since I was very small. I was involved in cleaning the neighbourhood and my school, helping in the kitchen during my neighbours' *hajatan* (wedding party), decorating the neighbourhood with colourful flags and lamps in celebrating Indonesia's Independence Day on 17th of August, and many other activities with my friends and neighbours. At the district level in Central Java province, gotong royong is also the subject of competition. The goal of the competition is to evaluate a community's work at the district level to assist the community to increase their level of prosperity (Central Java Province, 2017). In 2018, one of Semarang districts won the first place for the best gotong royong work (Gustav, 2018).

The junior secondary schools in which the data collection was completed are divided into private and public schools. In Indonesia, there is more private junior secondary education; 57 % of all schools are private (MoEC, 2013a). Semarang has 184 junior secondary schools of which 139 are private and 45 are public (Semarang City Municipality, 2019). From the 45 public schools, I chose three in which the teachers had attended CL professional development and had implemented CL for at least one year. The school names are presented as pseudonyms. The interviews in Phase 1 of the study, involving 18 teachers, were conducted at School A, B, and C. Phase 2 of the study in which classroom observations were conducted, were carried out in School A and B. The schools are presented as follows.

School A. School A, established in 1979, is located at the centre of Semarang. It is surrounded by business centres, government offices, universities, and public places. It is located between the main busy roads. The school is a three-level building on a 2,117 m^2 land (Semarang City Municipality, 2019). It has 23 classrooms, each occupied by 32–36 students; academic and education personnel rooms; four labs; one library; a few food stalls at the back of the school; and one small prayer room for Muslims. Most classrooms are equipped with

one whiteboard, one projector, wooden tables, and wooden chairs. In most classrooms, there are around 16 to 18 wooden tables, used by two students in each table. The teacher's table is at the front corner of the class. The school was being renovated when I was conducting the study thus the students had to start at different times due to a lack of rooms. For example, Years 8 and 9 classes were held between 7 a.m. and 12 p.m., while Year 7 students started at 12.15 p.m. Some classes had to occupy unfinished classrooms with no ceiling, no flooring, and no electrical facilities.

School B. School B, established in 1979, is located in South Semarang. It is in the middle of housing complexes and schools located in a quiet location off the main road. The school has a big open field in the middle of 5,900 m^2 land. There are 24 classrooms, each occupied by 32–36 students; academic and education personnel rooms; three labs; one music room; one library; one big prayer room for Muslims; and three food stalls at the back of the school. The classrooms are equipped with one white board, one projector, a small reading corner at the front of the class next to the entrance door of the classroom, 16 to 18 wooden tables of which one table is occupied by two students, and wooden chairs. However, a few classrooms have smaller wooden tables occupied by one student. The tables in all classrooms are arranged in rows. The schooling runs from 7 a.m. to 3 p.m. from Monday to Friday.

School C. School C, established in 1992, is located in West Semarang. The school is in the middle of housing complexes, schools, and universities. The school is 10,639 m^2, and has 23 classrooms, six labs, one library, rooms for academic and education personnel, one prayer room for Muslims, and some food stalls at the back of the school. Although I did not conduct classroom observations in this school, I observed classrooms and a science lab during teachers' interviews. Similar to School A and B, the classrooms in this school are equipped with a whiteboard, a projector, 16 to 18 wooden tables, and wooden chairs. The tables are arranged in rows.

Participants

The interviews were conducted with 18 teachers from three schools (School A, School B, and School C). The number of the interviewees was taken into account, as I wanted to explore and reveal more findings (Charmaz, 2014) about the focus of the study. The teachers' length of teaching career ranged from 12 to 36 years. Two of them had taught for more than 34 years, eight of them had taught from 22 to 30 years, and eight of them had taught from 12 to 20 years. The teachers taught different kinds of subjects, namely Indonesian language, English, mathematics, science and social science. Table 2 lists the participants, their teaching experience, subject, school, CL professional development provider and experience using CL.

Table 2

The Teacher Participants

No	Name	Years of teaching	Subject	School	CL PD provider	Experience using CL
1	Jati	20	Indonesian language	A	MGMP, USAID Prioritas	6 years
2	Rama	30	Physics	A	USAID Prioritas	6 years
3	Tuti	14	English	A	USAID Prioritas	6 years
4	Budi	34	Mathematics	A	USAID Prioritas, PLPG	10 years
5	Sudi	22	Indonesian language	A	USAID Prioritas	7 years
6	Wadi	18	Mathematics	A	USAID Prioritas	6 years
7	Hadi	19	Social science	A	USAID Prioritas	6 years
8	Nani	17	Science	A	USAID Prioritas	6 years
9	Krisentia	36	Social science	B	USAID Prioritas, PLPG	11 years
10	Nawang	23	Indonesian language	B	USAID Prioritas, MGMP, master's research	8 years
11	Aya	22	English	B	USAID Prioritas	6 years

No	Name	Years of teaching	Subject	School	CL PD provider	Experience using CL
12	Uni	30	Social science	B	USAID Prioritas, PLPG	13 years
13	Hana	21	Science	B	USAID Prioritas	6 years
14	Mima	14	Mathematics	B	USAID Prioritas, MGMP	6 years
15	Yanti	12	Indonesian language	B	USAID Prioritas, MoEC	6 years
16	Ning	26	Social science	C	USAID Prioritas	6 years
17	Bakti	18	English	C	USAID Prioritas, university workshop	10 years
18	Awan	25	Science	C	USAID Prioritas, undergraduate research, university workshop	12 years

Note. Names are pseudonyms. CL (cooperative learning), PD (professional development), PLPG (professional development training), MGMP (subject-teacher discussion forum), USAID (United States Agency for International Development), MoEC (Ministry of Education and Culture).

Data Collection

The data in Phase 1 of the study were collected through interviews, documents, and field notes. Documents and field notes were secondary data to support the interview findings. The data collection is presented below.

Semi-structured interviews. I took a semi-structured approach for the interviews as I wanted to have rich and in-depth answers from the teachers (see Wisker, 2008). The interview questions such as "Tell me about your teaching experiences," and "Tell me about your CL training or workshop that you have attended" were phrased to elicit open responses (see Appendix E). The questions are mostly open-ended questions since I wanted to explore the teachers' beliefs (see Cohen et al., 2011) and discover the teachers' stories (see Merriam, 2016) about CL and the influence of Indonesian values to teachers' beliefs about CL. The questions about CL were adapted from Antil et al. (1998) and modified to suit the study context.

Procedures. After gaining approval from the three school principals, I met the appointed staff of each school to seek information about teachers who joined CL professional development. School A identified nine teachers joining the CL professional development. School B recommended seven teachers to be interviewed, and School C suggested eight teachers. Then, I contacted potential teachers about my research by phone or by short message service instead of by email because the schools could only provide me with their phone numbers. Culturally, Indonesian people are not accustomed to using email as a means of communication. After setting up a meeting, I gave the teachers the invitation to join my research, along with a PIS, and CF. Eighteen of 24 teachers agreed to be interviewed: eight teachers from School A, seven teachers from School B, and three teachers from School C. Prior to the interviews, I described the research and asked the teachers' consent. The interviews took place in the schools at a time and place convenient to the teachers. The teachers chose quiet rooms in the schools for the interviews. In School A, the interviews took place in a meeting room. In School B, the teachers used the counselling room, as it was not occupied during the framework of the research. School C teachers chose different rooms at their convenience.

I started the interviews with general questions about the teachers such as where they lived, how long they had been teaching, which school they had taught at before. The questions were intended to make the teachers feel at ease and comfortable (see Merriam, 2016), and to develop a sense of trust (see Cohen et al., 2011) because I had never met them before (with the exception of one teacher who was my teacher when I was in junior secondary school). In addition, although the interviews were conducted mostly in Indonesian language as the national language of Indonesia, I occasionally spoke with the teachers in their mother tongue (Javanese) in order to build a bond of friendship prior, during, and after the interviews. I was heartened by the teachers' responses that they were willing to be contacted

if I needed for further assistance or information about the research. Moreover, the use of the participants' first and second language was in order to attain the teachers' full understanding of the issues under investigation and to develop a comprehensive interpretation of the phenomena (Denzin & Lincoln, 2005) of the teachers' beliefs about CL and to what extent Indonesian cultural beliefs influence their beliefs.

Prior to the interviews, I described the recording and transcription process, the teachers' right to withdraw from participation, the storage of the data, and confidentiality. I explained that I would take notes during the interviews. I assured the teachers that the preservation of confidentiality was paramount. After the teachers signed the consent, the interviews commenced.

Merriam (2016) alerted that an interview depends much on the person being interviewed. I learned things could be different after the first two interviewees, although I had practised the interview with some colleagues. My status as a researcher, a PhD candidate from an overseas university, might create a power status (see Charmaz, 2014). I realised that I should be more concerned with the situation of the interviews (see Charmaz, 2014), consider the age and rank of the teachers, and be more flexible with the order of questions. I refined the procedures and the interview guide.

After the interviews, I informed the teachers that the transcription process might need 4 to 5 weeks to be sent to them since there were 18 teachers to be interviewed in approximately four weeks. I notified them that I would send the transcriptions through email and hard copies for them to check, change or add to. The interview process took 7 weeks from the first week of November 2016 to the second week of January 2017, with 2 weeks off in between due to the Christmas holiday. The interview timeline was as follows:

Table 3

Timeline for Interviews

Week	Activity
1	Gaining approval from three school principals
2	Sending invitations to teachers who had joined CL professional development and had applied CL for at least a year.
3	Gaining approval from the teachers Making appointments for the interviews
4	Interviewing 3 teachers Refining questions
5	Interviewing 7 teachers
6	Interviewing 4 teachers Transcribing
7	Interviewing 4 teachers Transcribing

Documents. Documents collected in Phase 1 were some CL professional development materials, subject-matter textbooks, and the MoEC documents such as curriculum and assessment. I got access to the CL professional development materials from the teachers themselves and the USAID (United States Agency for International Development) Prioritas (2017) website. The subject-matter textbooks were available at the school library in which I conducted the study. The MoEC documents were available on line.

Procedures. I used McCulloch's (2004) approach to documentary data collection and analysis, that is, establishing authenticity, establishing reliability, establishing meaning and theorisation. Authenticity was established through verifying the author, the date, and the place of writing the documents to minimise the possibility that the documents were forged (McCulloch, 2004). Having had their authenticity established, I appraised the documents for their reliability, how far they could be relied on. McCulloch (2004) stated that reliability of the documents was related to truthfulness, bias, and the availability of the documents. Establishing meaning was the next step. To establish meaning, documents should be clear

and comprehensible. I considered the context in which the documents were produced (see McCulloch, 2004). The final step of the document analysis was theorisation. Theorisation requires "developing a theoretical framework through which to interpret the document" (McCulloch, 2004, p. 46). I selected some documents that were related to the teacher interviews and interpreted them to support my interpretation on the interview findings. For example, I collected the CL professional development materials from USAID because the teachers informed me that they attended CL professional development run by USAID. These documents allowed me to explore if CL was represented so I could understand what teachers may have learned through this professional development. It was also an attempt to triangulate findings.

Field notes. As stated earlier, I recorded my insights into significant events during the interviews. I also wrote about my experience during the visit to the school, the school environment, the interview venue, and any information related to my study. The field notes were used to support the interview data analysis.

Data Analysis

This section describes the process of analysis of the interview data. The data analysis process consisted of transcribing the recorded interview data and then analysing the interview data using thematic analysis to generate themes. Finally, I describe the translation process of the interview quotes.

Transcribing. Initial analysis begins when the data is transcribed (Kvale, 2007). Prior to transcribing the data, I listened to the recording of each teacher's interview to recall what was being reported, to explore interesting things missed during the interviews, and to immerse myself in the specific moments. The interview data were transcribed verbatim, that is, every word in the language spoken by the teachers was documented (see Kvale, 2007).

As suggested by Kvale (2007), the transcribing depends on several factors such as the material and the purpose of the inquiry and the available time and money. Due to the study's timeframe and the large amount of data, I hired two transcribers. The transcribers were to required sign a confidentiality agreement (see Appendix F). The first process of transcribing started when the two transcribers and I transcribed one teacher's interview data. We then discussed the results of our transcriptions to further check the quality of the document. In addition, I matched the recording with the transcription to maintain the reliability and the quality of the transcription from the transcribers. To further check the reliability and consistency of the transcriptions, I asked a colleague speaking Indonesian and Javanese, the languages that the teacher participants used during the interviews, to listen to the interviews and check the transcripts for correspondence between the original oral data and the written transcript. Prior to checking the transcript, my colleague signed a copy of the confidentiality agreement.

Thematic analysis. The interview data were analysed using a thematic analysis by Braun and Clarke (2006). Thematic analysis was employed to identify, analyse, and report themes within data due to the rich nature of data collected from the interviews (Braun & Clarke, 2006). Braun and Clarke (2006) identified six phases of thematic analysis describing the process by which the emerging themes were explored, refined, and finalised. The phases are described in Table 4 below.

Table 4.

Description of the Six Phases of Thematic Analysis

Phase	Description of the process
1. Familiarise yourself with the data	Transcribing data, reading, and rereading the data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.

Phase	Description of the process
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes	Checking if the themes work in relation to the coded extracts and the entire data set, generating a thematic "map" of the analysis.
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating the analysis back to the research question and literature, producing a scholarly report of the analysis.

Note. This table is adapted from Braun and Clarke (2006).

To familiarise myself with the data, firstly, after the transcriptions, I began with intensive reading of each interview transcript. By reading and rereading the transcripts, I developed a sense of connection to my participants and their data, and started to develop initial codes. In the second phase, with the first transcript, I started to code the data chunks using NVivo 11 to manage the big amount of data throughout the study. NVivo assists researchers to work with data more effectively, but cannot conduct the analysis itself (Bazeley, 2007). The initial coding was intended to explore interesting features of the data. I used descriptive coding to represent chunks of interview transcripts (see Miles et al., 2014). Descriptive codes describe the topics of the data chunks. The codes are usually in the form of a word or a phrase (Miles et al., 2014). I simply tried to describe and clarify what was there in the text(s) without attempting to interpret the text(s). Table 5 shows some examples of descriptive coding about the challenges that teachers faced in applying CL.

Table 5

Descriptive Codes of the Interviews

Interview transcripts	Descriptive codes
[1] Mmm… time, the time takes longer. The second one is the passive students. If we did not pay attentions to those students, they would not learn anything. Different from teacher-centred approach, students would listen and learned from the teacher.	1 Challenges in applying cooperative learning
[2] Thus, before the activity, the instructions of cooperative learning should be made clear to students. If we just let them work without guidance, the discussion will not work.	2 Instruction
[3] The group should be heterogeneous, boys and girls, smart and average students	3 Group composition

The codes and sub codes were added as the coding progressed from the second to the 18th individual transcripts. Following this, I re-read the first to the 18th transcripts and coded and un-coded data chunks. I then revised the codes, merging and renaming those that had similar data segments. In the third and fourth steps, as data had been initially coded and collated, I began to search for potential themes. I generated 13 subthemes that represent three overarching themes. In the fifth step, I searched for themes, and reviewed and refined the themes for how they related to the teachers' beliefs about CL. Figure 6 summarises the theme development.

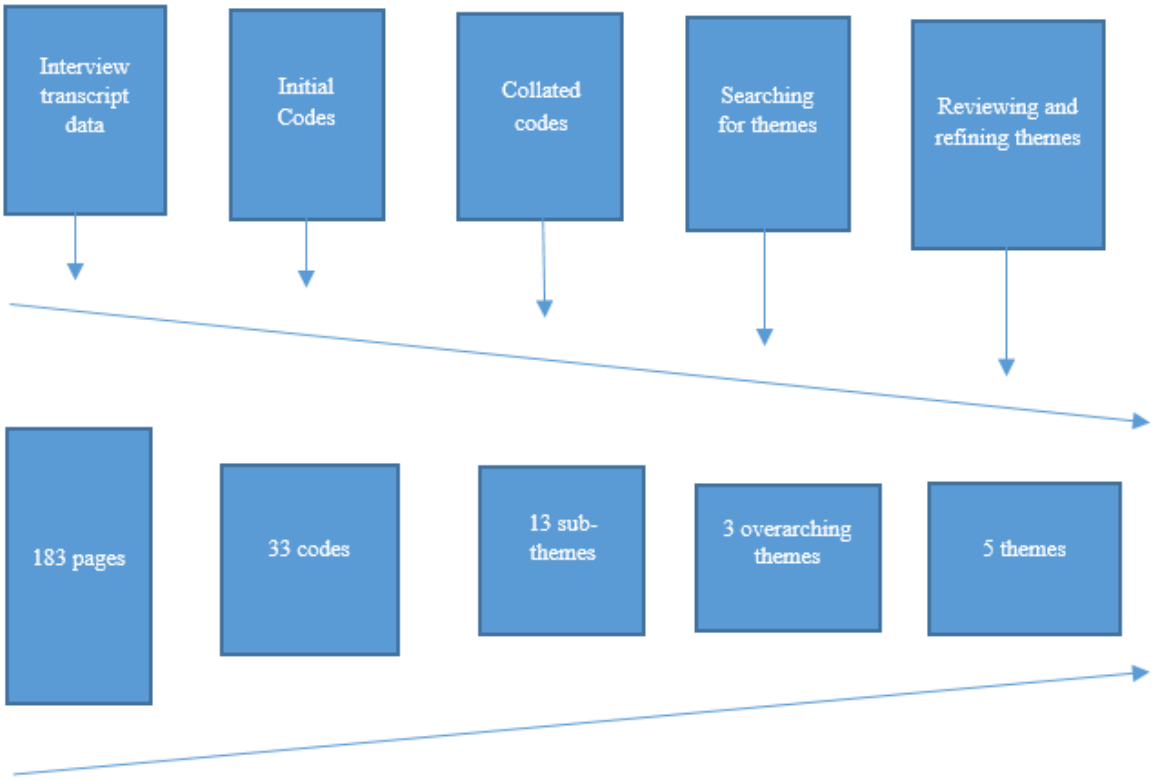

Figure 6. Theme development of the interviews.

Translating. Translating the interview data from Indonesian and Javanese language to English (in which the report is written) was necessary as an attempt to maintain methodological rigour throughout the research process. Methodological rigour is the means by which researchers show integrity and competence in their research and so improves the usability of the research findings for the readers (Tobin & Begley, 2004). Methodological rigour incorporates Denzin and Lincoln's (2005) notion of trustworthiness and the construct of credibility, transferability, dependability, and confirmability. Methodological rigour is not simply a judge at the end of the research but should be attended to throughout the research process Larkin, Dierckx de Casterlé, and Schotsmans (2007) claimed that cross-language qualitative research lacks adequate explanation of the translation procedure thus compromises the methodological rigour and the trustworthiness of the research findings.

As English is a foreign language to most Indonesians, the process of translation began prior to the interviews when I, together with a translator, translated the interview questions into Indonesian language. Then, two translators (one of them was involved in translating the interview questions), speaking both Indonesian and Javanese language, were employed to translate segments of interview data. Both translators are Javanese and teachers who understand the cultural and educational issues. The translators signed the confidentiality agreement (see Appendix G). The selection of translators was important because a translator might influence the result of the findings (Larkin et al., 2007, p. 468). The selection of translator was also considered as the process of translation can be complex and problematic, as concepts cannot always be translated across languages and cultures (Brislin, 1970). Translation involves not only linguistic aspects but it incorporates cultural and contextual interpretations (Shklarov, 2007). I led discussions about the research between the translators and myself prior to the translation process to avoid misinterpretations of the interview data. The discussions were aimed to give the translators a full understanding of the research aims, context of the research, and social and cultural issues.

I employed back translation, translation of a translated text back into its original language (Brislin, 1970; see Figure 7.). After themes were generated, I selected some interview data segments that would be used in the report findings. One translator (Translator A) translated the interviews from Indonesian and Javanese language to English, and the second translator (Translator B) translated back from English to Indonesian. After the process of back translation was finished, the translators and I discussed the final sets both in the source and in the target language via the internet. This phase is called “decentring” (Brislin, 1970, p. 186). In this decentring process, both the English and the Indonesian version were open to revision. Translator A and B, then, validated the English version of the data segment. I wrote the findings in English, and reported the findings in English. In the

process of writing the findings, I consulted the data segment from the interviews with my supervisors who are native speakers of English. One of my supervisors and I sat together and discussed the context, the utterance, the meaning of the data segment to avoid confusion (see Figure 7 for the translation process).

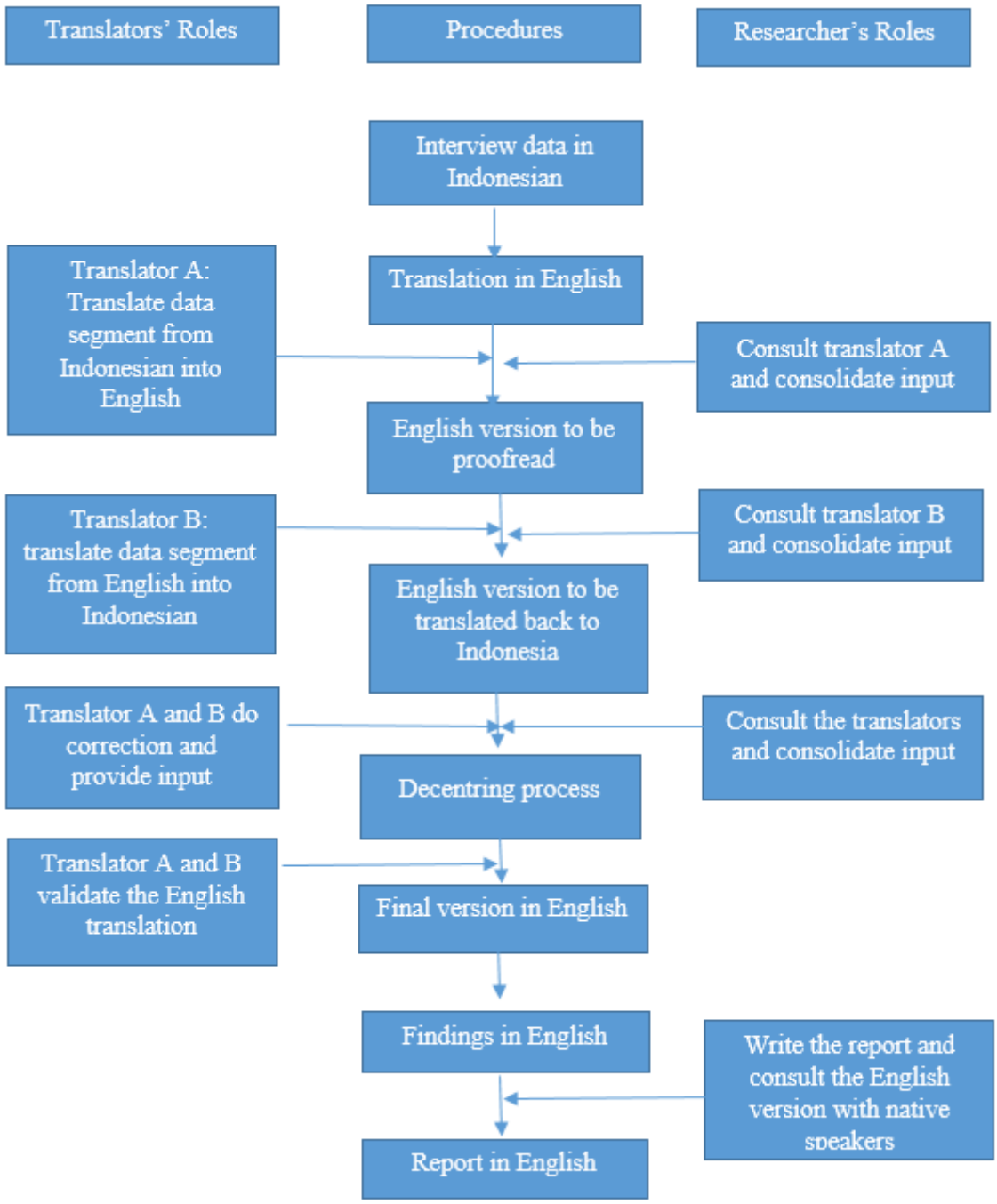

Figure 7. Back-translation process of the interviews.

Findings

Five themes were constructed from the interview analysis in Phase 1 of the study. The thematic analysis highlighted *preconceptions of CL, students' responses to CL and group behaviour, school contexts, institutional challenges,* and *Indonesian cultural values.* The themes and their relationship to the questions of my study are shown in Figure 8.

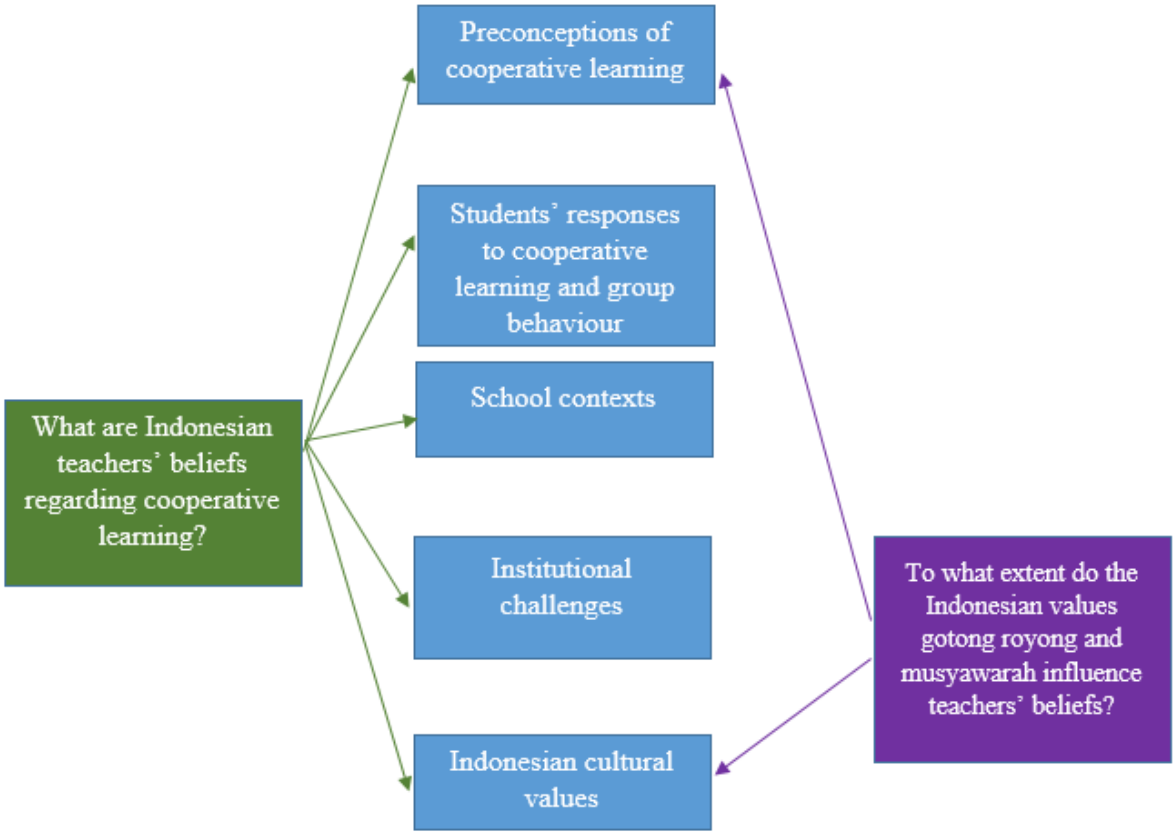

Figure 8. Themes of the interviews and their relationship to research questions of Phase 1.

Preconceptions of cooperative learning. Teachers' preconceptions of CL were determined by several factors, each of which is discussed below.

Sources of CL knowledge. Teachers' knowledge of CL influenced their beliefs about CL. Two teachers, Awan and Nawang, did research on CL for their undergraduate and master's thesis, thus they were likely to have more knowledge than the other teachers.

Nawang believed that when a CL lesson was prepared carefully, students would benefit from CL activities. She elaborated that:

> If we [teachers] want to implement cooperative learning, we have to be ready with the materials, with the instructions, with the media, so that cooperative learning lesson could run smoothly. Thus, when teachers have chosen cooperative learning model, they have to prepare everything, so that the students can do cooperative learning activities effectively. (Nawang)

Nawang's understanding of the strengths and pitfalls of CL showed that having sufficient knowledge of CL would support her to enact her beliefs. Previous research reported that careful planning is required if CL is implemented effectively (Antil et al., 1998; Dyson & Casey, 2012; Dyson et al., 2016).

Other than the two teachers mentioned above, who learned CL from universities in addition to professional development, the teachers' knowledge about CL was mostly gained from colleagues' sharing and professional development. The professional development materials focused primarily on CL structures. When asked about the elements of CL, none of the teachers referred to D. W. Johnson and Johnson's (2009) five essential elements: positive interdependence, individual accountability and personal responsibility, promotive interaction, appropriate use of social skills, and group processing.

Most teachers responded that the key principle of CL was cooperation. "There is cooperation, studying the materials together, and producing good ideas" (Jati), "the point is good cooperation, that's all. Then the students communicated to each other" (Yanti), "I think it is about cooperation, and then they should not be selfish but team work" (Tuti). A teacher elaborated:

> As far as I know, what is in cooperative learning principle there is what we call cooperation, and then there is what is known as building err… constructing, building

> something err…something they discover themselves, and then the teacher there is a facilitator not a source or as err… someone who gives material, no, but with the help of their teacher, students can discover, and also err... students can discuss, and present their results, that way they can implement the principle. err… giving value to what they have discovered and what their friends have presented. (Aya)

From the analysis of the document, I found that USAID Prioritas, which all of the teachers attended the CL professional development, discussed two elements—positive interdependence and individual accountability in their module (USAID Prioritas, 2013).

When asked about the CL structures, 12 teachers were not able to name them because they forgot the names of the structures, "What is it? [talking to herself, thinking]… I forgot the techniques [structures]" (Tuti), or they were confused in mentioning the name, "Err… that … err… it is a kind of quiz, is that TGT?" (Budi). However, nine of the teachers knew Jigsaw and had used it in their class. Two teachers, Nawang and Awan, knew STAD and Think-Pair-Share, Think-Pair-Square, a modification of Think-Pair-Share.

The training module provided by USAID Prioritas (2017) discussed nine CL structures some of which were translated into Indonesian language. The structures are Jigsaw, STAD, *Menulis Cerita Kelompok* (Writing Stories with the Group), *Menemukan yang Salah* (Find the Mistake), *Di Dalam dan di Luar Lingkaran* (Inside-Outside Circle), *Berpikir-Berpasangan-Berbagi dengan Kelas* (Think-Pair-Share), *Berpikir-Berpasangan-Berempat* (Think-Pair-Square), *Anggota Bernomer Berkerja Bersama* (Numbered Heads Together), and *Bertukar Pasangan* (Change Partner; USAID Prioritas, 2013, pp. 40–43). Three structures are similar to S. Kagan and Kagan's (2009): *Menulis Cerita Kelompok*, *Menemukan Yang Salah,* and *Bertukar Pasangan*. The three structures are described below.

Menulis Cerita Kelompok structure is used to teach writing a story with the whole group. First, each group member chooses an interesting topic to make a story in groups.

Second, each group member writes the title of the story they choose and three sentences to start the story. Third, group members rotate their stories towards their left. Every member who gets the story continues the story. Each member has two minutes to read and write the continuation of the story. The paper rotates several times. Finally, each member regains their paper and the group shares their stories (USAID Prioritas, 2013). *Menulis Cerita Kelompok* is similar to S. Kagan and Kagan's (2009) Allwrite Round Robin structure. In Allwrite Round Robin, the teacher poses a problem and provides think time. After each student writes their response individually, they take turns sharing their response with the group.

Menemukan Yang Salah structure starts when each member of the group writes two correct statements and one incorrect statement (USAID Prioritas, 2013). After that, each member reads his or her statements. The rest of the group discusses whether the statements are right or wrong. This goes on until everyone in the group has had a turn. The steps of this structure are much the same as Find-the-Fiction (S. Kagan & Kagan, 2009). Find-the-Fiction can be played with the whole class (S. Kagan & Kagan, 2009). Group members write three statements: two true and one false. One student in each group stands and reads his/her statements to group. Without consulting group members, each student writes down his/her own best guess as to which statement is false. Group members show guesses and defend their best guess. The teacher may or may not ask groups to attempt to reach consensus. Group members announce their guess, or write them down. Finally, the student who is standing to read the statement announces the false statement.

Bertukar Pasangan structure is conducted in pairs (USAID Prioritas, 2013). Each pair is given a task. When finished, each member of the pair splits and finds another pair to share his/her job. He/she then returns to the first partner and shares the findings or responses. *Bertukar Pasangan* is similar to S. Kagan's structure Pairs Compare (S. Kagan & Kagan,

2009). Pairs Compare starts with a teacher posing a question that has multiple possible responses. Pairs work together and discuss the responses. Pairs then pair and compare their answers with another pair. Finally, pairs work as a team to create additional responses (S. Kagan & Kagan, 2009).

Teachers' experience of learning CL. Teachers reported many opportunities to learn about CL such as peer teaching, subject-teacher meetings, training or workshops run by the education department (local and national) and USAID Prioritas. The experience of learning from colleagues had also shaped teacher's teaching as a teacher described:

> There was this fellow teacher making a case on the stage, then at that moment I got the picture of how I could make my students like physics, as they said that physics was not a fun subject to learn. However, after I saw this particular fellow teacher making his presentation, I took the good stuff and applied it to my class. It turned out that there were many approaches that we could use, and I put some of them into practice. It was the group approach. (Rama)

All teachers responded that CL professional development supported them in making their teaching more creative and fun. They found that professional development was beneficial for their teaching and students.

> The training by the USAID [Prioritas] was very useful as there were new things I learned from it such as the methods [cooperative learning structures]. We were trained how to start the class, and we had a practice on how to make students work, how to make evaluation and reflection. Before [the training], I rarely reflected on my teaching, on the students, or even the lesson, I rarely did those. (Wadi)

Another teacher said:

> There were many benefits of cooperative learning; there were many new things. Even though we have known it for a long time, but there were so many new things, we got

> from that USAID [Prioritas], for example in evaluation, and then how to arrange the seat when we taught as such. (Hana)

Four teachers claimed that before they joined CL training, they thought they were using CL: "I thought I have used cooperative learning since long time ago, I called it joyful learning, learning is fun" (Krisentia). Another teacher explained, "In my opinion, cooperative learning has been practised for quite some time but I did not know the name" (Nawang). This observation suggests that previous experiences of group learning have positioned CL as a worthwhile pedagogical approach.

Students' responses to cooperative learning and group behaviour. All teachers responded that CL promoted students' level of activity and participation in the lesson, "What I like about it [CL] is that students are active. When we [only] explained they would just be quiet, listen to us, but with CL they are active in their own learning" (Hana); "the students are active, I only give instructions and they can work by themselves" (Mima). Besides, teachers reported that CL made students more independent and confident, and motivated: "This cooperative learning approach can instil confidence, it is as if they are better motivated" (Jati); "hmm… motivated, motivated as 'Oh, I can do it,' they [students] become confident after gathering and socialising with their peers and they then have to perform [before the class], so they are automatically gaining confidence" (Jati). Wadi added that:

> This method [CL] is good. It allows students to be independent and learn how to be confident. When we give students worksheet, they learn how to be responsible to work on the problems, but if we use other learning models, the students will, you see, only follow their peers.

A few teachers complained about students' characteristics that hinder them to implement CL, "What we don't like is when we implement this [CL], unfortunately, in that

particular classes most students are passive, so it just doesn't work, I mean, it doesn't work the way it should" (Hadi). Another teacher commented:

> You see, students here are mostly still reluctant to think or ask. The students are not that active, they want teachers to tell those stories [lecturing]. In this [CL], students are encouraged to ask or present. It [asking the students to engage] is hard if teachers do not force them [students] to. (Wadi)

In contrast, one teacher who had conducted research on CL viewed passive students as a challenge. She said, "passive students are a challenge. If we neglect them, they will not learn anything, they will get nothing but nil [0]" (Nawang).

Although most teachers reported that only a few students in a class were inactive during CL groups, they reported problems with group behaviour. One of them said, "Not all members are high achievers, there is likely one person who does not contribute" (Hadi). Another teacher explained:

> Almost all students are active, only few [students] are passive. His/her friends usually told me that he/she did not want to participate. They said "Ma'am, he did not want to help." Then, I usually approach him/her. (Nani)

In responding to the passive students, the teachers typically reported that they approached the troubled students individually, recommending that they participate more in a group work.

School contexts. The theme "school contexts" describes a school's physical environment, tables and chairs, and size of the class. Among the three schools, School A stood out as it was under construction and teachers in this school indicated that this affected the time available for CL. It should be noted, for example, that during the fieldwork I saw construction work still in progress. Although the rooms were ready to use, some of the ceilings of the classrooms had not been installed, the floor tiles on the hallways were not yet

installed. The rooms were dusty and dirty. One of the School A teachers commented about how the school condition had affected her practice of CL:

> Here, there has been a construction work; a few minutes were deducted from each teaching hour. If we do not do this, school will not be over until 7 pm. [due to the construction]. Some students come in the morning [Years 8 and 9], while the other [Year 7] have classes in the afternoon. It was not effective. The lab, the other day, was used for class too; it was a situation of emergency. (Nani)

The average size of the classes of the three schools was around 62 m² for 32–36 students with 16 to 18 big wooden tables, for two students each, and wooden chairs. The tables, arranged in rows, were facing the whiteboard and the teacher's desk. Three teachers claimed that the layout of the classroom impacted on their ability to design a classroom layout that was suitable for CL. The first teacher said, "The problem here is the classrooms. The setting of the classroom is like that [rows], so I think I have to rearrange it every time" (Ning). The second teacher claimed that, "We often need extra time to arrange the place [classroom] because the room is not suitable [for group work], the classroom is too narrow so it takes time to arrange the tables, it takes time to arrange the chairs, and other things" (Tuti). The third teacher stated, "The thing [the problem] is the time, time to manage the class. The room is maybe too small that it takes time to arrange the tables, the chairs, and the other stuff." (Yanti). These teachers indicated that their classroom layout, furniture, and size were not ideal to be used for a CL approach.

Institutional challenges. Teachers faced several institutional challenges in applying CL. The challenges were time pressures, available time for CL preparation, exam pressure, national curriculum, and authority support.

Time pressure. A clear tension existed between material coverage and the time pressures associated with using CL activities. These factors had been reported as the biggest

challenge for teachers to implement CL. “Students will have a lot of questions to ask, they have so many questions and sometimes there will not be enough time” (Uni). One teacher explained:

> We need a lot of time [to apply CL] while the material is wide-ranging. So, at times, we have to keep up with those on-air targets that are what I do not like. For example, this second semester, there are many materials to cover for Year 7, whereas the time allotment is so short. By taking tests and the others into account, this forces us to re-think and come with strategies as to how to cover all the materials, whilst students can still have the time do activities. (Bakti)

Teachers also complained that preparing CL lessons took longer. For example, one teacher said, “This way, for that group discussion model for instance, it is not only practice [doing discussion] like that, we [teachers] still have to prepare the worksheet, and then the grading model, sometimes we are reluctant to do so” (Awan).

Exam pressure. Exam pressure was another issue that the teachers had to cope with. The pressure and high-stakes nature of the national examination had made the teachers less motivated to use CL. A teacher expressed her concern: “Concerning time, the second semester usually, um…, there are only question and answer sessions, quick ones, as there are many national exam mocks, up to four [mock] national exams, you know, practice tests and the like” (Awan). The other teacher identified a strategy she adopted to deal with the national exam. She said, “I reduce the time for discussion [during CL activities] in order to keep up with the materials for this second semester, in case we will have to deal with the national exams” (Uni).

National curriculum. Time pressure, material coverage, and exam pressure are interrelated. Although teachers reported that the newest curriculum (C 2013) requires teachers to use more student active learning, they said that they still dealt with a lot of

materials to cover and the exams which caused them decrease the CL activities. "We cannot cover the whole material if we use that group learning technique" (Mima). Another teacher added, "this is a challenge, you see, teachers in Indonesia have targets, so if we use that ma'am [addressing me as the interviewer], we cannot cover the materials, honestly, we cannot cover the whole material" (Wadi). Wadi further described:

> Still the same, how do you put it, they say it is the 2013 curriculum [focus more on students' engagement] but the material is still the same. We [teachers] still have the same targets. There will still be semester tests too; we are required to cover the materials in one semester. We have to cover the whole material. We are stuck with that.

Lack of authority support. The last, but not necessarily least, factor that influenced teachers' beliefs was the support from the local education office. A teacher who was also a vice principal elaborated the issue this way:

> It seems like support from the local education office is lacking. It seems like they just let it roll, there is no evaluation [of CL professional development] whatsoever. There are lacks here and there, the programme is like, running on its own, and here, teachers from public school, when we have to attend trainings, we must still work on dispositions from the office, from head of the office. When we had to join a training, we still had to cancel out the other assignments. (Wadi)

The teacher indicated that there had been lack of interaction between the local education office and the CL training providers; consequently, when there was a clash between CL training and the local education office programme, the teachers had to miss the CL training. The teacher's perspective was likely to be influenced by his position as a vice principal who was dealing with the dispositions and human resources in his school. He also indicated that the programme conducted by the local education office was not evaluated.

Indonesian cultural values. All of the teachers stated that CL supported Indonesian values gotong royong and musyawarah. Two teachers even associated CL with gotong royong. One teacher said, "cooperative learning implements gotong royong principles, [it] is not individual practice" (Tuti). The other stated, "it [CL] created gotong royong and [students] respect each other" (Awan). Further, all teachers agreed that those Indonesia values were in line with CL elements. A teacher commented:

> Alhamdulillah [thank God] with the practice from USAID [Prioritas], students tend to show their Eastern values that they seem to support each other. For example, when a female student couldn't do her work, one of the boys helped her with her things, while members of the other group offered help too. When I asked him why [he helped her], he said he was once helped when he lacked something for his biology lab work. (Rama)

The majority of the teachers were pleased that the practice of CL promoted students' social skills. A teacher stated that students not only achieved the academic goals but also improved their social skills.

> Building new characters in which students are not selfish and are responsible when coming up with ideas. They do not have to be too adamant, but they have to provide solid foundation instead, whilst accommodating the opinion of others. (Bakti)

In classroom contexts, teachers described that the practice of gotong royong was reflected through CL activities. A teacher described:

> When students [in groups] are given an assignment for instance, they will talk about it together, "you must bring this and that." They [the students] complement each other and they will work together and display their results or present them together. They will get the same score, and that makes them happier than working individually. (Krisentia)

A social science teacher gave another example:

> For instance, "you guys discuss the market, such as market economy [one of the lessons], you see, try to make an article on, eehh, a real market around you." Then students in one group should divide the jobs: who will work on the understanding of market, and what do people do in the market. They have to do field study. I ask them to go to the market. "What is the market nearest to you?" Most of the students live around Jl. Surtikanti, so they don't have to go far to Johar or Bulu market. See, that is gotong royong with their peers. Moreover, there is now the technology of WA [Whatsup], "I go to this market" [a text in WA]. Then they observed, they had the photos too, and they asked the vendors, there was the spirit of togetherness there, gotong royong, I want students to feel real work around their neighbourhood. (Hadi)

Musyawarah involves the process of doing everything together in order to reach general agreement or common consent of all community members (Darmaputera, 1988). In the context of CL, students are encouraged to work together to create a caring, cooperative community to increase achievement and to achieve goals assigned by the teacher. A teacher provided an example of the practice of musyawarah, "So, consensus is there, during task division in a group, while being engaged is when they are actually doing the agreed part and collect the results together" (Nani). A maths teacher described an example of making consensus in his class:

> Students in groups try to reach a consensus in defining a prism. Some say that a prism is a structure with flat base with rectangles on its sides. Some define it as a structure with a base and a top of congruent and parallel polygon. Results from these two definitions are agreed in a consensus saying that a prism is a structure with a base and a top made of congruent and parallel polygon with the sides made of rectangles. (Budi)

Discussion

All efforts to implement CL in Indonesia need to be more cognisant of teachers' beliefs because the findings of the current study show that Indonesian teachers' beliefs about CL are complex. They are shaped by personal experiences, opportunities, and events in learning and using CL, and by the students they teach, school contexts and infrastructure, and Indonesian cultural values. The study indicated that the teachers with greater knowledge about CL had stronger beliefs about the value of CL and held a more positive attitude towards using CL in their teaching. This finding is consistent with Lumpe et al.'s (1998) and Abrami et al.'s (2004) studies.

Consistent with Antil et al. (1998), I found that the teachers in my study were not familiar with CL elements. None of the teachers, even those who were trained in CL professional development, acknowledged positive interdependence or individual accountability, nor the other three elements: face-to-face promotive interaction, interpersonal and small-group skills, and group processing (D. W. Johnson & Johnson, 2009). The participating teachers in this current study were different in culture and contexts from the teachers in Antil et al.'s study, and they did not receive CL training from the researcher developers. However, both studies yielded similar findings. The findings of this current study confirm Antil et al.'s conclusion that there are discrepancies between teachers' and researcher developers' understanding of CL.

The teachers in this current study claimed that they enacted CL because CL increased students' engagement in the lessons. Previous research found that Indonesian students were characterised as passive students (Lewis, 1997). CL requires the students to be active learners through CL structure procedures and the division of roles in the group (S. Kagan & Kagan, 2009). The teachers in the current study believed that CL promoted positive attitudes such as independence, responsibility, and confidence, resulting in students who were

motivated to learn. This finding is consistent with Abrami et al. (2004), who reported that the teachers in their study believed that CL enhanced students' motivation and self-esteem. In this current study, the teachers report that CL did not work for all students. The teachers indicated that some students preferred a teacher-directed approach; students were not active in their own learning. This finding is consistent with findings of previous studies (Tamah, 2013; Zakaria et al., 2013).

The findings of this current study suggest that school environment plays a significant role in enabling teachers to implement CL. All teachers in School A indicated that CL was difficult to implement due to the reduction of lesson time during the school renovation. The teachers were concerned that CL would reduce the amount of content covered. As a response to the time constraints, the teachers used more lecturing rather than asking the students work in groups.

Although the teachers in this current study were aware of the advocacy for CL by their own national education system, they indicated that national curriculum and exam pressures limited their time to implement CL. Ten teachers stated that the coverage of material in the curriculum, and the focus on examinations, had discouraged them from using CL. This finding is consistent with Lumpe et al. (1998) who reported that the teachers believed that CL took too much time to enable them to cover the content as instructed in the science curriculum. Moreover, lack of support from the regional education office for CL professional development for teachers in my study impeded teachers' improvement of their CL efficacy despite several studies demonstrating that experience in learning CL increases teachers' use of CL (see Abrami et al., 2004; Gillies, 2008; Lumpe et al., 1998).

The findings of this current study revealed that all of the teachers believed that gotong royong and musyawarah values were reflected in CL. Two teachers conceptualised CL as a gotong royong approach, and the rest of them reported that gotong royong values were

practised in CL strategies. These findings are consistent with Demitra et al. (2012) and Wahyudin, Maryani, and Sopiansah (2018). In addition, this current study revealed that the value of musyawarah is reflected in CL through group consensus. Group consensus is important in CL as it fosters promotive interaction and appropriate use of social skills, and which motivates students to discuss problems to reach a consensus and new understanding (D. W. Johnson & Johnson, 2009).

In summary, the findings of the study indicate there are the positive forces in Indonesia that support teachers who are endeavouring to use CL include sufficient knowledge of CL, positive students' responses and attitudes. School contexts and institutional factors, however, have the potential to impede teachers enacting their beliefs about CL. The Indonesian cultural values, gotong royong and musyawarah, have influenced the teachers' beliefs about CL to the extent that the values were reflected, practised, and valued by the students when they were doing cooperative group activities. The next chapter will discuss how the teachers practise their beliefs about CL and to what extent their beliefs are congruent with the practice.

Chapter Five: Phase 2

The aim of this chapter is to answer the two research questions: "How do Indonesian teachers practise their beliefs about CL?" and "to what extent are the teachers' beliefs about CL congruent with their practice?" This chapter describes the multiple case study design, the four teachers who were purposefully (Patton, 2015) selected as the cases, the data collection, and the data analysis. The findings report in-depth insights into the participants' beliefs and practice of CL. The findings are then discussed through the lenses of the existing literature.

The Multiple Case Study Design

As mentioned in Chapter 3, case study research can be employed to study a single case or multiple cases (Merriam, 1998; Stake, 2005). When a case study includes more than one single case, a multiple case study is required. A multiple case is chosen because understanding individual cases with their similarities and differences would "lead to better understanding, and perhaps better theorizing" (Stake, 1995, p. 446). Moreover, Merriam (1998) stated that "the more cases included in a study, and the greater the variations across the cases, the more compelling an interpretation is likely to be" (p. 40). Heeding these recommendations of the benefits of a multiple case study design, I applied the design to gain a deeper understanding of teachers' beliefs and practice related to CL. The selection of multiple cases allowed me to show the differences between commonalities among the cases' beliefs about and practices of CL.

The Cases

Of the teachers participating in the interviews of Phase 1, a group of four teachers was selected purposively for observations in Phase 2. Two teachers taught at School A, and the other two taught at School B. The selection was based on the interviews in Phase 1. I selected four teacher cases who frequently implemented CL in their classrooms, showed

enthusiasm to practise CL, and were willing to undertake professional development throughout the research project. The four cases chose their own pseudonyms.

Jati. This case study teacher had been a teacher for 20 years in secondary schools. He graduated from a state university majoring in the Indonesian language. His career started as an Indonesian language teacher at a private senior secondary school in the outskirts of Semarang. Two years later, he was selected as a civil servant, and assigned to teach at a public secondary school teaching the Indonesian language. Jati had attended several workshops in CL. One of the workshops provided him with some field practice and supervision. Jati also learned CL from MGMP (subject-teacher discussion forum) for Indonesian language teachers, in which he had held the position of the head of regional MGMP. The forum discussed the development of Indonesian language, current curriculum, lesson plans, and issues regarding the teaching and learning of Indonesian language. As well, the forum shared teaching approaches such as CL and teaching techniques.

Budi. This case study teacher had been a mathematics teacher since 1983. He graduated from a teaching college with a mathematics major. He had taught in five different junior secondary schools throughout his career. In his current school, he served as a vice principal for curriculum; his responsibilities included: ensuring that teaching, learning, and assessment were following C 13; managing teachers' workload; developing syllabi and assessment; and working with governing boards at city and province levels. Budi had learned about CL through professional development training running by the MoEC in 2007. He had learned several CL structures such as Jigsaw and STAD. In 2011, he attended an inclusive 3-year programme run by USAID Prioritas in which CL was workshopped for 3 days. In the workshop, he received mentoring from a university lecturer that focused on the implementation of CL in the classroom.

Nawang. This case study teacher had been an Indonesian language teacher for 23 years and completed her master's degree in education in 2012. Nawang has held several positions in her current school. Her latest post was as vice principal for curriculum. In 2013, she was appointed as a national instructor for C 13. Some of her tasks included leading workshops on how to implement C 13 for the Indonesian language subject and mentoring teachers in applying C 13. She had won several awards for teaching such as second place in an Indonesian language teachers' Olympiad and, in 2016, second place as the best Indonesian language teacher in Semarang. Nawang learned CL through professional reading and through research. In her master's degree thesis, she compared the effectiveness of Think-Pair-Share with the Group Investigation (Sharan & Sharan, 1992), in writing news. Nawang also studied CL through workshops conducted by USAID Prioritas and MGMP. With USAID Prioritas, she completed a 3-day workshop. In the first day of the workshop, she learned some CL structures. On the second day, she and her group made a lesson plan using CL structures, mentored by a university lecturer. On the third day, the mentor supervised them as they implemented the lesson plan in a real class.

Krisentia. This teacher had been a social science teacher for 36 years. She graduated from a teaching college with a social science major. In addition to her role as a teacher; she had been assigned to the school public relations office. As public relations liaison, she assisted the principal to communicate the school's policy and programmes to parents, the school committee, and community. Krisentia initiated three programmes in her school: Bank Mini, knitting class and hydroponic garden. Bank Mini was an unofficial bank run by students during the recess, while knitting class and hydroponic garden were conducted after school hours. Krisentia had been familiar with CL since 2006 when she joined professional development run by the MoEC. She has subsequently learned more about CL through books

and workshops conducted by USAID Prioritas. She used several CL structures in her teaching such as Jigsaw and Inner and Outer Circle (S. Kagan & Kagan, 2009).

Data Collection

This current study was situated in interpretative-qualitative methodology using a multiple case study approach (Stake, 2005). There were multiple data sources that I collected in Phase 2 of the study in an attempt to provide robust findings and to validate the findings (see Miles et al., 2014; Patton, 2015). I used classroom observations, post-observation interviews, field notes, and documents to investigate whether the cases enacted their beliefs and to find out how they implemented CL in the classrooms. Interviews of each case conducted in Phase 1 of the study about the espoused beliefs were included in data analysis to investigate if each case's espoused beliefs were enacted. Table 6 summarises the data collection activities in Phase 2.

Table 6

Data Collection Activities in Phase 2 of the Study

Data collection activities	Participants	Duration of the activity	Frequency	Total Activities
Classroom observations	4 teachers	80 minutes	4 times in 12 weeks	16
Post-observation interviews	4 teachers	30 minutes	4 times after classroom observations	16
Field notes		Throughout the data collection (Phase 1 and 2)		
Documents		Throughout data collection (Phase 1 and 2)		

Classroom observations. Observations are essential in case study research (Merriam, 1998; Stake, 1995). Observations not only aim to describe the setting, activities, and people involved, but also the meaning of what is observed from the perspective of those

observed (Patton, 2015). Observations provide researchers with a deep understanding of the case (Stake, 1995). In a study of teachers' beliefs, Pajares (1992) suggested that observations of behaviour should be included if more vibrant and more accurate inferences in regard to how teachers practised their beliefs were to be made.

Classroom observations contributed in two ways to the overall investigation of teachers' beliefs about CL. First, they were used to illuminate whether the case study teachers enacted their beliefs about CL. Second, through observations, I could see how the teachers implemented CL in the classrooms. I could observe the use of certain aspects of CL such as CL elements, CL structures, group composition, group interactions, and CL tasks.

Procedures. Before the observations commenced, I described Phase 2 of the study to the four teachers: how I would conduct the classroom observations, along with post-observation interviews, and how I would video record the teachers' classes. After obtaining the consent of the teachers, I took 40 minutes of the teachers' session to introduce myself to the students and describe my study to them. I explained to the students that the study was being conducted to ascertain if and how CL is used in their classrooms. The students were informed that the class observations would be completed four times over 12 weeks and a video recorder would be placed in a position that would not disturb the teaching and learning process. Students were informed that any information which they had provided would be kept confidential and that they had the right to decline to give consent.

As the study would involve students under 16 years old in classroom observations, parents' or guardians' consent and students' assent were obtained. According to the parameters set out by the University of Auckland Human Participants Ethics Committee, the participation of children under the age of 16 requires the consent of their parents or guardians and then the participant's own assent. The parents' or guardians' consent was gained before inviting assent from the children themselves.

The classroom observations took 12 weeks. Each case was observed four times during the period. In each observation, I observed the whole lesson which lasted approximately 80 to 120 minutes, depending on the teacher's schedule and at their convenience. One teaching session lasted for 40 minutes. However, all of the teachers taught at least two teaching sessions or 80 minutes. Each teacher chose the classes that he/she would like to be observed. Thus, four classes of each participant were used in Phase 2 of the study. All classroom observations were video recorded. The video recordings were used as instruments for producing records of the researched events that could be analysed to expand interpretations of the events (Stake, 1995). The video recording provided details of the aspects that I asked during the interviews in Phase 1 such as the practice of CL structures, the elements of CL, the group composition, and the CL tasks.

After the field work, I observed the video-recorded lessons and I wrote descriptions of the lessons. The descriptions of the lesson were given to the teacher cases for checking (see Guba, 1981). The teachers' confirmation and agreement on the transcripts were very important to maintain the reliability of the data. As the transcripts were written in English, I offered the teachers the option of hiring translators to assist them in understanding the transcripts. One of the case study teachers insisted on translating one set of classroom observation transcripts himself and sent the translation back to me to check. All teacher cases confirmed that the transcripts accurately described their classroom activities. Only minor revisions were suggested by the teachers.

Post-observation interviews. Post-observation interviews were conducted after the classroom observations. The interviews were aimed at clarifying specific issues that emerged during classroom observations and to clarify shared understandings of the terms and descriptions that the teachers used in their teachings. Speer (2005) suggested that a lack of shared understanding about specific terminology between teachers and researchers can

produce data that may not accurately represent teachers' beliefs or practice and eventually would yield insignificant findings and conclusions.

Procedures. The interviews were conducted a few days after the classroom observation. Prior to the interviews, I watched the teaching videos and selected some excerpts to discuss. The selection of the excerpts focused on the theoretical underpinning of CL, CL elements, CL structures, group composition, task selection, and students' behaviour. In the discussion, the teachers and I explored the meanings of particular descriptive terms and connected the terms with the examples from their practice as captured in the video. They also shared some thoughts that they had during the classroom observations.

The teachers decided the time and the place to conduct the post-observation interviews. Due to their work load, we frequently met after school hours in one of the rooms in the school premises. Nawang and Krisentia requested to be interviewed at their home on one occasion each, as they were busy during the week after the classroom observations. The post-observation interviews took approximately 15 to 30 minutes. The interviews were recorded and transcribed. The transcriptions of the interviews were sent to the teachers to be checked. The four teachers agreed to the content of the transcription and they did not make any changes.

Field notes. Field notes were essential to helping understand the alignment between teachers' beliefs about CL and the practice of their beliefs (see Emerson et al., 2011; Nespor, 2006). This perspective was grounded in literature and in each teacher's school context. The field notes in Phase 2 were used as primary data to triangulate findings from classroom observations and post-observation interviews. Moreover, the field notes were used to reflect my feelings and impressions during classroom observations, post-observation interviews, and field observations such as school environment and school activities. Following the field

observations of the case study setting, field notes were electronically transcribed and stored as Word documents on a password-protected computer.

Documents. The documents in Phase 2 were employed as secondary data. I collected teachers' lesson plans, lesson materials, teachers' assessment sheets, students' peer-assessment sheets. The teachers provided the documents. Lesson plans were given to me prior to classroom observations. Lesson materials such as textbooks and copies of newspapers, assessment sheets, and students' peer-assessment sheets were submitted during or after the classroom observations.

Data Analysis

The current qualitative study employed inductive analysis using Miles et al.'s (2014) framework to find themes from the information collected during Phase 2 of the study. The theoretical orientation of inductive analysis allows researchers to gather various sources of data from the study then explore the collection to uncover patterns, relationships within the data and themes (Creswell, 2008). Miles et al., (2014) stated that qualitative data analysis is an interpretative process that is inductive by nature, in which meaning is found from texts and images collected during the study that answer the research questions.

In qualitative data analysis, there are several techniques for text data processing and preparation that can be used to code the information to find meaning from the information collected. Two processes that can be used are first-cycle coding and second-cycle coding (Miles et al., 2014). These inductive processes are employed to reveal categories and themes from the text (Miles et al., 2014). Saldaña (2016) described the two cycles of coding conducted to filter the raw data into relevant text. First-cycle coding is used to process the bulk of new raw data to filter out relevant information. After first-cycle coding is completed for sets of data, second-cycle coding provides researchers with relevant text data that can be grouped into categories for further analysis (Miles et al., 2014). In this multicase study, the

cyclical coding process of data analysis was conducted to identify themes within each single case. A cross-case analysis was used to find themes that were common to, or different from, all other cases involved in Phase 2 of the study (see Merriam, 2016; Miles et al., 2014; Stake, 2005).

First-cycle coding. First-cycle coding includes techniques that are basic and transparent providing the qualitative researchers with the environment to identify, evaluate, and re-evaluate codes that emerge in the initial coding process (Saldaña, 2013). In this current study, first-cycle coding was used to code Phase 1 interviews, classroom observations, and field notes to investigate whether teachers' beliefs about CL were practised and to find out how Indonesian teachers practised CL in the classrooms.

In the first-cycle coding for the current study, I employed several types of coding included in elemental methods (see Saldaña, 2016). Initial coding and In Vivo coding were used to code data from Phase 1 interviews of each case and post-observation interviews; process coding was utilised to code classroom observations; descriptive coding (explained in Phase 1) was used for field notes (see Saldaña, 2016). Descriptive coding gives a brief statement of the topic of the data chunk (Miles et al., 2014). Initial coding is a form of open coding used by researchers in the initial phase of coding that allows researchers to make sense of the data and integrate data to answer the research questions (Saldaña, 2013). Charmaz (2014) stated that the initial coding is a stage to look for distinct categories in the data. In Vivo coding is a coding method that uses participants' words or phrases as a code to discover meanings and understand their actions (Charmaz, 2014). Process coding or action coding is a method that focuses on the action in the data (Charmaz, 2014; Miles et al., 2014). A process code is a word or a phrase that denotes an action. It uses the gerund or *–ing* words as part of the code. A gerund is a noun formed from a verb, denoting an action or state. For example, when the teacher informed the students what the lesson objectives were, I coded the

text as “informing the lesson objective.” The code “informing the lesson objective” described the teacher being in the process of telling the students the objective of the lesson.

For the interview data, initial coding and In Vivo coding were useful because the methods provided me with guidance through the process of re-evaluating the amount of data collected or revisiting codes that were coded in Phase 1. In the initial coding and In Vivo coding process, I re-read and re-coded the Phase 1 interview transcripts of each teacher of the interview data. Table 7 presents examples of initial coding and In Vivo coding.

Table 7

Initial Coding and In Vivo Coding

Interview Transcripts	Codes
[1] Cooperative learning is a teaching approach, er…, there is a communication between teacher to student, student to teacher, student to student. [2] Thus, cooperation is built; cooperation among the students to find answers. [3] Students can formulate what they are learning themselves, er… something like that. [4] Cooperative learning in principle is there is er… what we call cooperation. [5] There is knowledge construction, er… something that they discover themselves [the students].	[1] defining cooperative learning [2] cooperation [3] formulate learning [4] cooperation [5] knowledge construction
[6] I sometimes have problems with grouping the class.	[6] problems of grouping
[7] First, they [the students] don’t get along well with some of their friends. [8] Then their houses are not in the same area [for doing home project], so it is difficult to communicate.	[7] don’t get along well [8] difficult to communicate
[9] I realise that it is not always good to let them [the students] choose their own group because they will have the same group for the whole semester.	[9] recognising self-weakness

Process coding was used to code data from classroom observations. Process coding helped me learn the process of a particular issue or area and how to handle the process in an analytic sense. Process coding allowed me to code actions recorded in the classroom observations of the participating teacher and his or her students. I watched the videos of the classroom observations and completed written descriptions of what was happening in the

classroom. I inserted my field notes in the classroom observation description texts to link my own observation during classroom observation and the teaching practice. The classroom observation, post-observation interviews, and field note transcripts were then coded. Table 8 describes the process coding of the classroom observation episode and descriptive coding of field notes (in italics).

Table 8.

Process Coding

Classroom Observation Transcript and Field Notes	Codes
[1] After the group finished [presenting their group work], the teacher encouraged other groups to ask questions. He asked the groups several times. After 30 seconds, I saw him talking to a group near him. I could not hear what they were talking about, but not long after that a member of the group stood up and asked a question. [2] The teacher clarified the question. He added some more explanation to the question	[1] encouraging the groups to give feedback to the presenting group [2] clarifying a question
[3] The fourth member of the presenting group thanked for the question and answered the question. After that, the class gave applause to the group. [4] The teacher added some explanation to the answer that the group gave.	[3] responding to a question (a group) [4] clarifying answers
[5] He then encouraged the students to give feedback and ask another question. He confirmed twice that no group asked a question. Then he asked the presenting group to return to their chair. After 2 minutes, no group was ready.	[5] encouraging the groups to give feedback to the presenting group
[6] The teacher offered the groups to come forward to present the result of the discussion. He appointed the first-row group, but the group was not ready. He kept asking the groups if they were ready.	[6] offering and appointing groups to present
[7] It had been the 4th time he [the teacher] asked the groups to present the result of the discussion. It seemed that the groups needed more time to do the task.	*[7] time management*
[8] After 2 minutes, a male's group from the 4th row came forward. The first member said that he was the moderator. He introduced himself and his role and followed by the rest of the members…	[8] presenting (a group)
[9] *I was surprised that the moderator was the silent student who joined the 1st back row group. I did not know when he moved to the other group. I needed to ask him [the teacher] what happened.*	*[9] changing group*

Second-cycle coding. Second-cycle coding provides the researcher with the opportunity to begin grouping first-cycle codes into categories and themes (Miles et al., 2014). The coding process in the second cycle is crucial to condensing data into clusters that reveal themes in the data. Miles et al. (2014) suggested pattern coding to generate categories and themes. Pattern coding allows researchers to be more focused on their data and to create a cognitive map to understand events and interactions; for a multicase study, pattern coding provides researchers with a strong foundation to conduct cross-case analysis by looking at similar themes across cases (Miles et al., 2014).

In this study, I used pattern coding to identify categories from the Phase 1 interview and classroom observation description codes within each case. Salient categories were generated from each case data set codes. Table 9 describes the emergence of the categories, taken from Tables 6 and 7.

Table 9

Pattern Coding

Codes	Categories
defining cooperative learning "cooperation" "formulate learning" "cooperation" "knowledge construction"	Definition of cooperative learning
"problems of grouping" "don't get along well" "difficult to communicate" recognising self-weakness in grouping	Grouping problem
encouraging the groups to give feedback to the presenting groups clarifying questions clarifying answers	Teacher's roles

Categories from the initial interview data were analysed to look for larger categories. The larger categories were then scrutinised to find themes that reflected the espoused beliefs about CL. Figure 9 shows the coding cycle that generated larger categories.

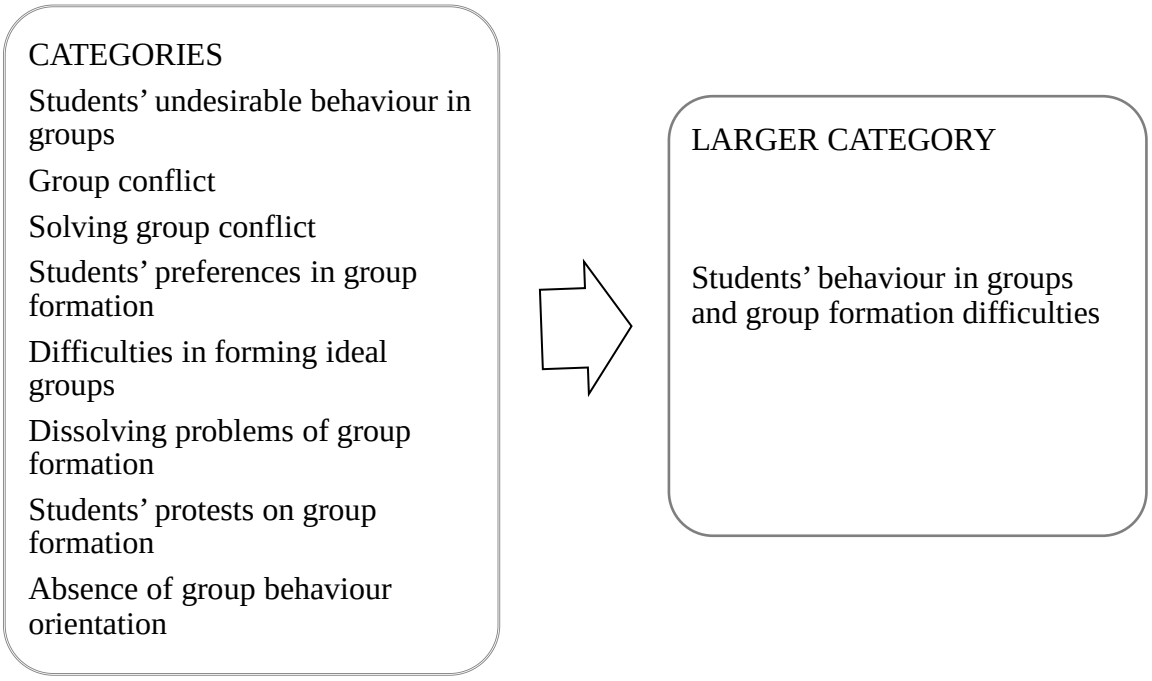

Figure 9. Coding cycle from categories to a larger category of the Phase 1 interview data.

Codes from the four classroom observations, post-observation interviews, and the classroom observation field notes of each case were analysed to search for categories. First, I coded the texts. After coding, I generated categories. The similar categories of each data source were then clustered to create a larger category. Figure 10 describes the matrix of the coding cycle from codes to a larger category of the three data sources (see Miles et al., 2014).

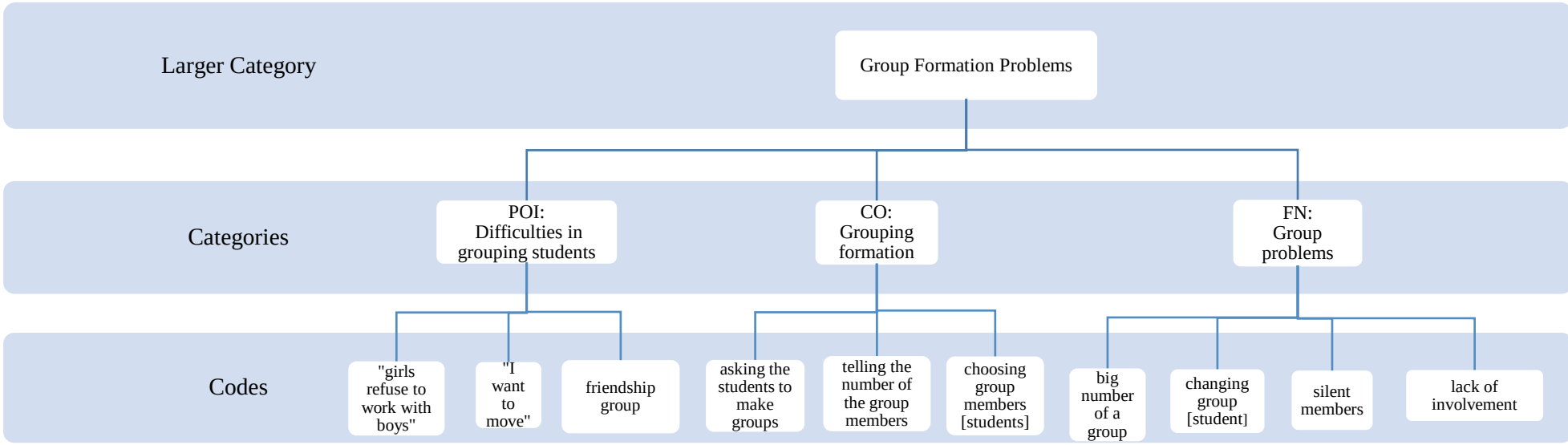

Figure 10. Coding cycle from codes to a larger category of classroom observations, post-observations, and field notes. POI= post-observation interviews, CO=classroom observations, FN=field notes.

The analysis to find the pattern between a set of data from Phase 1 and Phase 2 of the study was conducted to search for themes that provided answers to the research question (see Miles et al., 2014). Larger categories of the espoused beliefs (Phase 1 interviews) were matched with the larger categories of the practice of their beliefs (classroom observations, post-observation interviews, and classroom observation field notes) to answer the research questions in Phase 2 of the study.

Findings

Themes were generated from the analysis of each case data set of Phase 1 and Phase 2. The analyses of four cases' data set share similar themes such as the personal concept and knowledge of CL, students' behaviour in groups, and institutional support and challenges. However, each case data set yielded different themes that are unique and contextual. The findings of each case are presented below.

Jati. Four themes were generated from the analysis of eight larger categories from interviews of Phase 1 and seven larger categories from the three data sources (classroom observations, post-observation interviews, and classroom observation field notes) of Phase 2 of the study. The themes were *personal concept and knowledge of CL, authority and control of the class, students' behaviour in groups and grouping challenges*, and *institutional support and challenges* (see Appendix H for the development of larger categories and themes).

Personal concept and knowledge of CL. Jati defined CL as "a fun teaching approach. It teaches students to learn to work together in a group and bring about good inputs." During Classroom Observation 1, he told the students that they would use CL and he restated the definition of CL in front of the class "Cooperative learning is to work together

cooperatively and learn how to do successful collaboration." However, he did not elaborate on what successful collaboration was.

When asked about the elements of CL, Jati said, "There has to be cooperation among the students. Together they [students] generate good ideas. Each group member has opinions that they communicate in the group. Eventually, they could finish the task." Although he did not mention two critical elements of CL: positive interdependence and individual accountability (D. W. Johnson & Johnson, 2009), they were observed through the division of roles in groups, but these two elements were not demonstrated in the tasks. For example, in the classroom observations, Jati instructed the groups to divide the roles: leader, moderator, presenter, writer, and reader. Each group member was responsible for carrying out one aspect of the assignment and this division of tasks made the members positively interdependent.

Jati highlighted the importance of good interaction in a group in the initial interview. He said, "In groups, members should interact well so that they can produce something good." He always asked the groups to turn their chairs so they were facing other students to enable the group to interact. The following is an example of a classroom observation episode that describes Jati's way to encourage students to interact with their group mates:

> After a few seconds, he [Jati] changed his mind. He grouped the students into four again. He said, "Now I want you to work in a smaller group, A, B, C, D [pointing to each group] Please turn around your chairs so that you can interact with your friends [in the group]." He then monitored the students and made sure that they turned around their chairs to discuss the task. (Classroom Observation 3)

The quote described Jati promoting positive interaction among group members. Promotive interaction is one of the five elements of CL, which encourages each group member to accomplish group goals (D. W. Johnson & Johnson, 2009).

Jati reported that he often used Jigsaw in his classrooms. He defined Jigsaw as "a kind of discussion in which high achievers are assigned in different groups so that each group would have one expert that could coach the group." However, during classroom observations, I did not observe him using Jigsaw or any CL structures. He confirmed during post-observation interviews that he did not use Jigsaw. He could not remember the names of the CL structures. He explained:

> I did not know the name of the CL structures used [during classroom observation] because there were a lot of [CL] structures I learned. I am sure it was not Jigsaw [laughing] because there must be experts [in a group]. I did not know exactly which type [CL structures] I used. From the characteristics [of the group] I know it is CL as there were cooperation and social interaction. The students learned from their peers. They gave feedback to others. Everyone had different opinions so that he or she would develop their understanding. You can see that they also gave feedback on the presentation such as the voice [of the reader] was not loud enough. (Post-observation interview)

When asked about CL structures that he had used, he said, "I used Jigsaw, discussion, demonstration, and many more." During classroom observations, I observed that he used mostly group discussion where, at the end of the discussion, a group representative presented a summary in front of the class. He confirmed during the post-observation interview "I tend to ask the groups to do discussion."

Authority and control of the class. Delegating authority and giving the students power to construct knowledge are crucial in CL (Cohen & Lotan, 2014; D. W. Johnson &

Johnson, 2009). However, Jati's experience as a student and his past pedagogical beliefs seemed to influence him in applying CL in his classrooms. I wrote in my field note after the Phase 1 interviews:

> Jati's previous idea about learning was learning gained only from teachers and books. When he was a student, he believed that teachers were always right. He would sit and listen to his teachers' explanation. He would write everything his teachers said. When he became a teacher himself, he taught his students the way his teachers taught him. He was always worried if he did not explain everything in the book, his students would not be able to understand the lesson and pass the tests. However, his beliefs about learning had shifted when he was introduced to CL in a workshop in 2010. The workshop showed him that learning could be fun and students would learn more if they were involved in their learning. (Field notes)

Jati's reservations about his students' competence in understanding the lesson were apparent during classroom observations. He controlled the discussion; he chose which group would present, he often appointed the student who would present, and he restated the ideas of the group discussion. Here is an example of how he controlled the discussion:

> After giving the opinion, everyone clapped. Jati restated what he said. He said, "According to Group B, the health insurance should be given to the poor people." Then, he asked a girl in Group C to respond to Group B's opinion. He then asked Group D representative to give their opinion about the case to respond to Group C. The representative stood up. After she finished, Jati restated her [Group D representative] group opinion. (Classroom Observation 4)

In my classroom observation field notes, I wrote:

> I think Jati has over-guided the groups. He controlled the discussion. He appointed the groups to present, and he restated their opinions. Thus, when a group was

> presenting, no groups listened. I assumed that they depended on their teacher to respond and to guide the discussion. I think the way Jati ran the activity made the discussion less responsive and interesting to the students. (Field notes)

Students' behaviour in groups and grouping challenges. Jati claimed that most of his students responded positively to CL. He said, "It is interesting to apply cooperative learning because cooperative learning makes learning fun. It [CL] develops students' positive characteristics such as cooperation, discipline, gotong royong, and harmony." However, he reported that a few of his students showed uncooperative behaviours during group work such as being passive, lazy and difficult to manage. He stated several times during Phase 1 interviews that he had not found effective ways to change these students' behaviour. He explained:

> For example, in a group, some students do not do the work. They disturb their friends in the group. They are noisy. Sometimes I don't know to handle this. I have told them to stop but they won't. It is hard to change it [uncooperative behaviour].

I observed that Jati ignored such uncooperative behaviour. I wrote in my field notes:

> When he [a group representative] was reading, some of the students were not paying attention. They kept on talking. Jati did not remind the students to pay attention. He was standing at his table, and then he moved to sit in front of his table. He was looking around yet he did not remind his students to pay attention. (Field notes)

Jati reported during post-observation interviews that he was aware of the students' behaviour, but sometimes he felt exhausted telling them to pay attention. He said, "They [the students] would stop chatting and start paying attention when I reminded them. It would not last long though. They would start making noises again after a while." He also mentioned in the initial interviews that he could not just pay attention to some difficult students, as he had to focus on other students as well. He reported, "I would ignore one or two difficult students

because they are hard to change. I have consulted with the teacher counsellor about their behaviour, but there has not been any improvement." When I asked if Jati had CL orientation at the beginning of the semester or lesson using CL, he answered that he had never conducted an orientation session for group behaviour to introduce expectations for roles and behaviours that facilitate CL.

Jati stated that he had some challenges in grouping the students during initial interviews. The students would group themselves with the same gender or with their close friends. He described how "most of the students ask for the same-gender groups. The boys group themselves with boys, so do the girls. It is hard to mix them." He reported that he would just let the students choose their own group so that the group could function well although he was aware though that an ideal group ought to consist of mixed-ability students. The grouping problems were observed during the class observations when Jati asked them to make a group of eight based on the table where they sat.

> Group B consisted of one girl and five boys. The girl seemed uncomfortable. She was looking away at Group A. When Jati was approaching, he took a note from the girl and read it. After reading her note, Jati was talking to them. When he left the group to approach Group C, the girl turned her seat back to Group A again. She was writing in her note. The boys were discussing the task. (Classroom Observation 3)

I wrote in my field notes:

> There was one girl in Group B who hardly interacted with her group mates who were all boys. The boys did not ask her to join them either. She may not have been comfortable being the only girl in the group. She did the task by writing down her opinions or arguments of the case in her book. There was one opportunity though that at one point she came forward to represent the group. She wrote her opinions of the

> case on the board which likely did not represent her group's opinion but hers. (Field notes)

In post-observation interviews, Jati informed me that he talked to the girl in Group B. He said, "I tried to encourage her to join the discussion with her team, but she said she did not want to." In addition to same-gender groups, the students chose to work with their close friends. During the Classroom Observation 1, I observed a boy moving to a different group in the middle of finishing the task.

> After two minutes, a boy's group [consisting only boys] from the fourth row came forward. The first member said that he was the moderator. He introduced himself and his role and followed by the rest of the members… (Classroom Observation 1)

In my field notes, I wrote:

> I was surprised that the moderator was the silent student who joined the first back row group. I did not know when he moved to the other group. I needed to ask him [Jati] what happened. (Field notes)

During post-observation interviews, Jati explained that the boy asked him to move to the other group. He said, "I respected his choice because he remained silent when he was with his first group. After he moved, he directly had a role. He became the moderator and helped the group to share roles." Jati added that the students chose their own group because they worked best with their close friends. He admitted, "This [grouping composition] is one of the difficulties in applying cooperative learning." CL suggests that teachers form heterogeneous groups that consist of different genders, academic competence, interests, and ethnicity to be able to provide students with opportunities to work with diverse group members (Dyson & Grineski, 2001).

Institutional support and challenges. Jati reported that C 13 promoted active learning that required students to be independent, creative, interactive learners. He stated that

CL was one of the teaching approaches recommended to be used to provide more student-centred learning. Jati claimed that he used CL in most of his classes to increase students' involvement in learning. He said, "With the new curriculum [C 13] I used CL in almost every meeting [lesson]. I asked the students to work in groups and discuss the tasks." During the classroom observations, it was apparent that students were accustomed to working in groups. The groups were formed quickly once Jati asked the students to make a group.

> Jati asked if the students had already made groups. Some said they had, but some had not. He asked students to make groups [he did not use any grouping techniques]. He did not mention the criteria of the group. He timed the students to make a group by counting from 1 to 5. When he came to 5, the students were expected to have a group. Students turned their chairs to make a group of three to five. There were seven groups: four groups of four students (same gender), one group of three students (same gender), and two groups of five students (same gender). The grouping was quick. It took less than 1 minute. (Classroom Observation 1)

The students divided the roles without Jati asking them to do so. In my field notes from Classroom Observation 1, I wrote, "That was a quick grouping. They [the students in groups] divided the roles right after they had groups. One of them wrote on their worksheet, and the rest discussed the task."

Jati stated that CL supported the implementation of character building in C 13. He said, "Generally, CL has helped students to work together, practise giving opinions, and be tolerant of others. Those characters are included in [the] 2013 Curriculum." Indeed, one of the four bases of the development of C 13 is that students need skills to face futures involving the ability to communicate, to think critically and wisely (including the application of moral perspective to a social problem), and to be tolerant and respectful of different opinions (MoEC, 2013b).

Jati, however, reported that he encountered some challenges in applying CL due to an inadequate school facility, busy workload, and the need to cover excessive course material, that resulted in limited time for lessons using CL. Jati's school had been under construction during the fieldwork of the study for over a year. He mentioned that he had to move the class during the construction work that made the time for CL even shorter. He was also unable to stick the groups' work on the wall since the students occupied different classrooms. In Classroom Observation 1, Jati had to move the class because the room that the students were using did not have any facilities that he wanted to use such as a projector or power outlet. The field notes described:

> The class was moved to another class because it did not have power outlets, projector, and other facilities. The original class was newly built, and it was not finished but it had been used for a few months already. During the process of moving, a teacher, teaching the class next to the class that Jati wanted to use, expressed his concerns about the noise [students' chatter]. Jati had to explain to him that the students' original class did not have the facilities that he needed. (Field notes)

Due to workload, Jati conveyed that he had limited time to prepare lessons using CL. His unpreparedness was shown during the third and fourth classroom observations:

> Jati introduced another topic for the pairs to discuss. The pairs stated their opinions and whether they agreed or disagreed. Jati divided the class into two groups. He said, "Now you work in a big group, Group A [pointing to his right], Group B [pointing to his left]." Jati asked the students sitting in the front row to turn around. After a few seconds, he changed his mind. He grouped the students into four again. (Classroom Observation 3)

I wrote further in the field notes:

> Jati seemed confused in grouping students. First, he grouped the class into two groups then he asked the students into four groups. At the beginning of the session, he asked students to work in a group of eight but then he asked them to work in pairs. (Field notes)

During post-observation interviews, Jati mentioned that he had to teach three different classes every day. That left him limited time for CL preparation.

Budi. Five themes emerged from 10 larger categories from initial interviews and nine larger categories from three data sources (classroom observation, post-observation interviews, and field notes). The themes are *personal concept and knowledge of CL, personal and pedagogical change, students' behaviour in groups and grouping challenges, conflicting roles,* and *institutional challenges* (see Appendix I for the development of larger categories and themes).

Personal concept and knowledge of CL. Budi learned CL through workshops and professional development conducted by the MoEC. He claimed that he often used CL in his classrooms. He said "I often do it [CL]. I just did it in my Year 8 class yesterday [prior to the interviews]." He defined CL as "a teamwork, a teamwork. For example, Jigsaw, I often use Jigsaw. They [the students] give opinions, and then they make a conclusion, and so on. So it is teamwork." Budi did not mention if the group would need to accomplish a goal together or whether the group should participate equally to complete the assigned task (see Cohen, 1994; D. W. Johnson & Johnson, 1992). When asked about the elements of CL, Budi said, "In principle, a CL group should work together." He did not discuss positive interdependence, individual accountability, or face-to-face interaction (see D. W. Johnson & Johnson, 2009).

Budi was familiar with some CL structures. He mentioned the Jigsaw and Team-Game Tournament (TGT) structures. However, the way he described Jigsaw was not the

same as Jigsaw in its original conceptualisation by Aronson and Patnoe (2011). A Jigsaw group consists of at least an expert on every part of the material being discussed as learning takes place for each expert and the Jigsaw group as a whole (Aronson & Patnoe, 2011). Budi, however, stated in post-observation interviews that there were experts in each Jigsaw group. When asked what TGT was, Budi was unsure. He said, "Err… that … err… it is a kind of quiz, is that TGT?" In TGT, learners compete with learners from other groups who are similar in their efficacy in order to gain scores for their own group. Group rewards are based on individual learning (in the tournaments group members get scores for their group). Equal chances to earn a reward occur because the competition is held between the members who have the same performance level (Slavin, 1980, 1991). Although Budi was uncertain, he remembered that it was a kind of quiz. However, the most important part of practising TGT was not mentioned, that is, the process of coaching group members, and understanding and applying the materials among group members before the quiz.

During classroom observations, I did not observe Jigsaw, TGT or any CL structures used by Budi in his class. This was confirmed in post-observation interviews. He said, "It was not Jigsaw for sure because in Jigsaw group there will be experts. I do not really know [the name of the method Budi used]. It was like a discussion group." I wrote in my field notes:

> I did not observe any CL structures being used. The group structure that the teacher used was a discussion group. The students worked in a group of four to solve mathematics problems and discussed the answers with the whole class. The teacher, then, asked one of the group representatives to write their answers on the board. (Field notes)

During Classroom Observations 1 and 3, I described:

> After setting up the group, Budi gave a mathematics problem to solve in a group. For the first few minutes, some group members were doing the problem by themselves as

> Group 1, 2, and 3. Then when Budi was approaching the groups, they turned their chairs and started to discuss. After 2 minutes, Budi moved around checking the groups' answers or discussions. (Classroom Observation 1)
>
> Budi asked the students to make a group of four. He asked the students to sit face to face. Some students moved from their seat and formed a group, not with their nearest neighbour. Budi freed the students to choose. Then he gave a worksheet for each group to discuss. (Classroom Observation 3)

At the end of one lesson, Budi gave a quiz from a worksheet. The answers to the quiz were submitted to him before the end of the lesson. It was confirmed in the post-observation interviews that he did not apply TGT, instead, he used individual assessment. The lesson plan Budi provided, prior to Classroom Observation 1, indicated that he would use problem-based learning. Problem-based learning is not a CL method although both have some similarities such as small-group learning, active engagement, and student– student interaction (Davidson & Major, 2014). Problem-based learning is an approach in which problems give stimulus to students working in a small group to learn course concepts. Thus, the problem(s) drive the learning. In CL, however, the task might not be necessarily a problem(s).

Personal and pedagogical change. Budi reported that both disposition and his teaching had changed compared to his early career. He was very pleased with the changes. He elaborated:

> I am very happy with the changes in me. When I was a young teacher, I was strict and stern and you know I teach mathematics. For many students, mathematics is a challenging subject. The situation in the class was so tense. I felt like the students were afraid of me. When I entered the class, I felt like they [the students] were so tense. However, I have changed now. I am not as emotional as I used to be. I used to get cross easily when the students could not solve mathematics problems. Now, when

> they [the students] make mistake, I would just giggle. I am surprised at what [the change] has happened to me. (Phase 1 interviews)

Budi's personal change enabled him to get closer to his students. He said, "I feel like I am getting closer to my students. I have deep empathy for some students who are poor at mathematics. I love my students more." Due to his growing love for his students, he wanted to make mathematics as fun as possible for his students. He stated, "I want to give my students an experience of fun learning in class. They should not be afraid of me or mathematics."

During classroom observations, I observed that the students were relaxed and open towards Budi. The students asked questions when they did not understand. They came to the front to write their answers without hesitation. Budi was patient in explaining mathematics problems. The following episode, which occurred at the beginning of one of Budi's classes, demonstrates this open classroom environment:

> Budi asked the students if they had not done the homework. He then asked why the students had not done it yet. Three students said that they could not do it [the homework] because it was difficult. One student responded that he was absent. Another student said that he was busy. Budi then asked students which problem was difficult for them. The students mentioned one number, and he helped them by showing the students how to solve it. He then asked a student to show the answer by writing the answer on the board. The student's answer was not entirely correct, so Budi explained again. (Classroom Observation 1)

Budi reported that he had improved his teaching. He used more technology and media and group work in teaching mathematics to make the subject more interesting and responsive to students. He explained:

> When the internet was introduced, I was very happy because I can search lots of multimedia for teaching mathematics. I often use media in my teaching. I would assign the students in groups to make media such as wheels to find out the circumference of the wheels. (Phase 1 interviews)

During classroom observations, Budi always used multimedia such as images and videos to explain mathematics concepts. He said, "Using multimedia helps my students understand some mathematics concepts." He mostly downloaded images and lesson videos from the internet. In addition to using videos to teach mathematics, Budi showed the students some clips about moral values. In one of the classroom observations, Budi showed the students a movie to teach them some moral values. During post-observation interviews, he explained that he showed the movie to encourage students to help their friends in the group.

Students' behaviour in groups and grouping challenges. Budi reported that most of his students liked to work in cooperative groups. He said, "Most of my students like to study using cooperative learning. The class would be boring without it." However, Budi also mentioned that a few students did not like working in groups. He gave me an example:

> There is one student in 8B that does not like to work in a group. Her name is Ani [pseudonym]. She is a smart student but she does not like to work in a group. One day after the class, she approached me and asked, "Can I work alone sir?" and I said, "You cannot Ani. You have to work in a group. I just showed you a movie that if we cooperate we will have a great power. We will be unbeatable." But she insisted, "I cannot sir, I cannot. No one will choose to work with me or only boys will be willing to work with me." So, I am confused. (Phase 1 interviews)

Each class demonstrated different levels of engagement during group work. Budi stated, "Each class has different student characteristics. Some classes show active engagement but some classes do not. The students are low achievers. They are not engaged

during group work." The class that Budi chose for the observation was an engaging class; however, I observed that many group members were not involved in the group activities especially during Classroom Observation 1. In my field notes, I wrote:

> The members of the groups did not show positive interactions. I observed only one group (Group C) that showed positive interaction among the members. The group consisted of all girls. Group A consisted of two boys and two girls. The boys were discussing the problems by themselves and the girls were solving the problems themselves without interacting with the boys. (Field notes)

In post-observation interviews, Budi reported that the students were passive because they resented not being allowed to work with their close friends." In Classroom Observation 1, Budi used a grouping technique that made the students work with random students. The following is an episode that shows the grouping technique:

> Budi asked the students to move based on his instructions. First, students sitting on the left moved to the left one seat. Then, students sitting on the right moved to the right one seat. Next, students sitting on the left moved up one seat. Finally, students sitting on the right moved backwards two seats. The grouping took 3 minutes. Some students took a while to understand the instruction; some moved fast. (Classroom Observation 1)

In the other classroom observations, when Budi let the students choose their own groups, the active engagement of the groups improved.

> I observed that the most groups showed positive interaction except Heptagon. Two members of Heptagon did not show positive cooperation. One of them seemed sick as he put his head on the table for the whole group work. One of them did not participate in group discussion and presentation. The other groups were sitting face to

> face, interacted and communicated. They argued, agreed and disagreed about the answers. (Field notes)

Budi did realise that he rarely applied mixed-ability and mixed-gender groups in his class (see Cohen, 1994; Cohen & Lotan, 2014). He would let the students choose their group in the hope that they could interact with their group well. He said, "This is my weakness. I would just free the students to choose their groups. But the good side is they [the students] will feel happy when they work with their close friends and they can work better." However, when he freed the students to choose their own groups, a student like Ani would have difficulty finding groups. He admitted that he had not found any solutions to this grouping problem.

Conflicting roles. In addition to teaching, Budi was the vice principal in his school. His role as a vice principal frequently removed him from the classroom. He informed me that he was always busy before, during, and after national exams. He would have many meetings with other schools and leave his classes. During the field study, Budi postponed three classroom observations because he was assigned by the school regarding his role as the vice principal. During Classroom Observation 3, he explained to the students why he could not teach in the previous meeting. I described the classroom observation episode as follows:

> The class started. Budi opened the class and asked one of the students to lead other students to sing the Indonesian national anthem. After that, he told the class why he could not teach for the two meetings. As a vice principal, he was responsible for managing the computer-based national exam. The computer-based national exam was a new program from the Ministry of Education to minimise unfairness during the test. Budi had to cooperate with other schools as the school did not have a sufficient number of computers to be used for all the Year 9 students. He told the students that

> he had to work extra time. The day before the session, he had to work up to 2 a.m. in the school. (Classroom Observation 3)

Budi's role as a vice principal influenced the application of CL in his class. He told me in post-observation interviews that he often missed classes due to his role. During classroom Observation 3, Budi left the class twice because he had urgent matters regarding the computer-based national exam. In the classroom observation description, I wrote:

> Budi gave a worksheet for each group to discuss. Budi told them to create a name that is related to mathematics. After giving the task, Budi left the class. He said he had an urgent matter with computer-based national exam programme. He left for 10 minutes. (Classroom Observation 3)

Institutional challenges. The level of difficulty of mathematics materials was reported to be one of the factors that challenged Budi to apply CL. Budi reported:

> Cooperative learning is hard to be applied when I have to teach difficult mathematics concepts. It [the application] is difficult, for example, Algebra for Year 7 students. They [the students] had not been taught it yet when they were in primary school. So I have to use a direct method [giving lecture]. (Phase 1 interviews)

In Classroom Observation 1, I observed that many students asked Budi questions because they had difficulties with the homework. Thus, he spent the first session (40 minutes) to explain the homework. I wrote in my field note:

> Budi spent the whole first session to discuss the homework. Many of the students could not do the homework because it was difficult. When Budi checked the answers, many of the answers were wrong. So he re-explained the material. He also asked the students to write the calculation on the board which also took time. (Field notes)

Budi confirmed in post-observation interviews that he had to use the session to explain the homework because most of the students could not understand. He stated:

> As you can see, yesterday [during classroom observation], there were certain lessons that were very difficult to understand. Although I had asked the students to learn it [the lesson] in groups, they failed to complete the task. It [the group] did not work. Then, I had to do lecturing or demonstrating. (Post-observation interviews)

Budi reported that he had limited time to implement CL activities in his class due to the materials he had to finish in a semester. He mentioned several times during the initial interviews that he had problems with it. He commented:

> If I implement cooperative learning like what I got from the [cooperative learning] training, I could not finish the material. The time is not enough. That's right, the time. The ideal one is that we should use cooperative learning with all the materials. I could not do it. I select some chapters [in the textbook] for cooperative learning, not all chapters.

Budi mentioned that he used a teacher-directed method because CL activities took more time. He said, "The time for cooperative learning takes longer. First, they [the students] had to discuss the [mathematics] concept and do the exercise before they can coach the other groups. That takes time."

Nawang. Five themes were generated from eight larger categories of initial interviews and seven larger categories resulting from three data sources (classroom observation, post-observation interviews, and field notes). The themes were *personal concept and knowledge of CL, planning for using CL, students' behaviour in groups and group composition, assessment,* and *institutional support and challenges* (see Appendix J for the development of larger categories and themes).

Personal concept and knowledge of CL. Nawang reported that she had practised CL long before she attended CL professional development or studied it for her master's degree thesis in 2009. She stated:

> I have practised some cooperative learning structures for a long time ago, but I did not know the names [the structures]. When I read some of the structures, I had practised some of them but I did not know the names. (Phase 1 interview)

When asked about what CL was, Nawang said:

> It is a teaching approach that er… there is communication between the teacher and students, students and students, so that construction er… cooperation, they [students] can construct, can er… construct knowledge by themselves. (Phase 1 interviews)

Nawang further stated that in using CL in a lesson, a teacher's job was to be the facilitator of learning, assisting the students to construct knowledge. She said, "a teacher is a facilitator, not the only source [of knowledge] er… not a person who gives the knowledge, but the students with the help of the teacher construct the knowledge." Nawang commented that CL in principle was about cooperation and knowledge construction.

Nawang believed that teachers played an important part in using CL in their classroom. She recommended that the teacher be active in checking if the group functioned well so that every student got the most benefits of CL. She commented, "If the teacher does not supervise and check the groups, the members of the group might not share equal jobs." During classroom observations, Nawang always monitored to check the groups' progress. In one of the classroom observations, I described:

> The group started to work. Nawang approached the Elephant group. She stopped the group from working and asked them to pay attention to her. She asked them a few questions. She then moved to Dove group. One of the members asked her question, and she explained for a few seconds. She then moved again to Cat group. She spent a little longer time with the groups. (Classroom Observation 1)

In the field notes, I wrote:

> Nawang guided the students and ensured that they were on task. She moved around and made sure that the groups were on task. She gave some groups assistance on the task. Occasionally, she encouraged students to take part in the discussion actively. (Field notes)

Cohen and Lotan (2014) stated that while the groups do their jobs, the teacher's role is not one of "laissez-faire" (p. 134). Laissez-faire in an educational context would mean that the teacher was free from interactive and motivational responsibility. When the students work in groups, the teacher is to observe carefully, listen to the discussion, ask questions to stimulate discussions, and give feedback when necessary (Cohen & Lotan, 2014).

Nawang reported that she had practised several CL structures such as Jigsaw, Think-Pair-Share, Think-Pair-Square (a modification of Think-Pair-Share), and Group Investigation. She had also conducted a study to compare between Think-Pair-Share and Group Investigation to teach "News Report," the topic of the lesson. I observed only Think-Pair-Share during Classroom Observation 2. I described:

> Nawang asked the students to work in pairs. The students worked with their pair who was sitting in the same table. Nawang gave them a text and some comprehension questions to be discussed and analysed. She gave the pairs 15 minutes to work. The pairs started to work… Nawang asked the pairs to share with the whole class. (Classroom Observation 2)

I did not observe that any CL structures in the other three classroom observations. I wrote in the field notes of Classroom Observation 1:

> I did not observe any CL structures. The groups were working on a task. One of the group members was assigned to present the group's answers in front of the class. Other groups gave feedback or questions at the end of the presentation. The presenter was reading the answers. (Field notes)

During the first post-observation interview, Nawang thought that she had used a Group Investigation, but after recalling the activities, she was not sure it was a Group Investigation method. She finally concluded that it was problem-based learning. She stated:

> I think it was Group Investigation. There were some problems that they had to solve. First, they [students] knew the objective of the lesson. They had to retell a story. They divided the roles. They had problems then they had to find information as much as possible. They looked for the information in the fable and then they divided the tasks. Is it a Group Investigation? I think… er… if it were a Group Investigation, they searched the information… er… I have done Group Investigation. The students search the information by doing interviews or reading books. Now, I am not sure it was Group Investigation. However, the most important was that the students were given a task in which they had to solve the problems. Please find the model for me [laughing]. I think it was problem solving… [laughing] yes … yes… [confirming her answer]… problem-based learning. (Post-observation interviews)

Planning for using CL. Nawang emphasised the importance of good planning, in using CL in a lesson, several times during initial interviews. She suggested:

> If we [teachers] want to implement cooperative learning, we have to be ready with the materials, with the instructions, with the media, so that cooperative learning lessons could run smoothly. Thus, when teachers have chosen the cooperative learning model, they have to prepare everything, so that the students can do cooperative learning activities effectively. (Phase 1 interviews)

When asked about the challenges in implementing CL, Nawang stated that the greatest challenges would be unclear instructions of the task and lesson preparation using CL. She reported:

> The challenge [in implementing cooperative learning in a lesson] is the unclear instructions. The students would just talk by themselves [not doing the assigned task]. They would not learn anything, and they would not do what I expected. Thus, when I will implement cooperative learning in my classroom, I have to be ready with the material and the instructions [for the material], and the teaching media, so that cooperative learning lesson could run well… the lesson plan needs to be clear. (Phase 1 interviews)

Prior to classroom observations, Nawang gave me a copy of her lesson plan. The lesson plan was clear. She described the lesson objectives, the basic competence that the students had to master. She described how she would use multimedia such as slides for presentation, audio, and texts. She wrote the instructions of the tasks and assessments. She prepared the names of the groups. In the classroom observations, I observed that Nawang often repeated the objectives of the lesson, the basic competence that the students had to master, and the instructions for the tasks. I wrote in my field notes, "I noticed that the students were aware of what they would learn. Nawang kept repeating the objectives of the lesson. She asked the students to read out and make sure that they knew what they were expected to do." The following are some episodes noted during Nawang's class.

> Nawang informed the students the objectives of the lesson on the slides. The students read the objectives of the lesson from the slide in unison. After that, Nawang restated the objectives of the lesson.… Nawang showed a slide that contained information about the task. Students were to make a group of six, practise, and perform the story. She also gave a scoring sheet. The scoring sheet was used to evaluate other groups' performances. Nawang showed the scoring criteria on the slide.… Nawang showed the lesson procedures. She then told the titles of the stories that the groups would perform [the first procedure]. The students then made a group of six.… Nawang told

> the students to read the procedures on the slide to check what they would do next. (Classroom Observation 3)

In the end of the class, Nawang restated the objectives of the lesson and reviewed if the students had achieved the objectives.

In Classroom Observation 3, although Nawang gave the instructions for the task clearly, I noted that there was a group that was confused about the task. Nawang spent time with the group and re-explained the instructions. When confirmed during post-observation interviews, Nawang reflected:

> My weakness of my teaching was lack of retelling models. I should have shown the class a video to retell a story or I could have retold a story from the book that I read. I learned that the students understand better if they are given some examples about the task. That was my reflection of the lesson. (Post-observation interviews)

Students' behaviour in groups, grouping challenges and group composition.

Nawang reported during initial interviews that most of her students were eager to work in groups. She said, "My students are enthusiastic in doing cooperative learning. They are active in completing the task." She also told me that she had asked her students' opinion about CL on a reflection sheet. She reported that most of the students enjoyed CL. She, however, mentioned that a few of her low-achieving students had difficulty in working in a group. During classroom observations, I observed that most of the students working in their groups showed promotive interactions, in which group members had ongoing interaction, encouraged and facilitated each other to complete the task. I wrote in my field notes:

> Promotive interaction was present from the beginning of the lesson until the end of the lesson. I observed that almost all students in their groups communicated well and they were on task, even the lowest achieving group. Nawang encouraged her students

> to work on the task. She often visited the groups and asked questions. She spent some time to the lowest achieving group. (Field notes)

During post-observation interviews, Nawang stated that the students were active, even the low achievers. She re-affirmed that to make the students active, teachers ought to actively check the group activities.

Nawang was aware that groups should comprise students of different abilities so that the high-achieving students could coach the low-achieving students. She mentioned that she used several grouping techniques such as the weekly duty groups (a weekly group that cleaned the class), sitting-arrangement groups (students sitting next to each other or the same table), and teacher- or leader-nominated groups (Nawang or the group leaders chose the group members). Nawang would ask the students to make a group based on seating arrangements to save time. In the four classroom observations, Nawang did not mention criteria for group composition, thus, when she asked the students to make a certain number of groups, the students formed the groups based on the place they sat on that day. For example, when Nawang asked the students to make a group of four, the two students in the first row turned their chairs to make a group of four with the two students sitting in the second row. With this seating arrangement group, Nawang could not assure that a mixed-ability group would be achieved. In the final three classroom observations, some low-achieving students worked in the same group and had difficulties in carrying out the tasks. The situation in the classroom was as follows:

> Nawang was moving around to check. She stopped at one of the groups practising outside. The group seemed lost and needed help. One of the group members asked her about the story. A few moment later, the group started to practise the dialogue and Nawang listened to them. A few minutes after she left, one member of the group

> approached her again and asked her about the content of the story. (Classroom Observation 3)

I wrote in my field notes:

> The group seemed to consist of the low achievers in the class. Nawang helped them a lot. They sat together in the corner. I observed in the previous classroom observation [Classroom Observation 2] they were the last group to submit their work. Check with Nawang for their competence [during post-observation interviews].

During post-observation interviews, Nawang confirmed that the group consisted of low-achieving students. She informed me that she could not change the group because the students formed the groups based on the seats they were sitting in on those days. She was aware of the drawbacks of this kind of grouping. She explained:

> The students changed their seats every day. One of the weaknesses is that when the low-achieving students sit in the same tables, it is likely that they will be in the same group. It is suggested in cooperative learning that the group consist of mixed-ability group. (Post-observation interviews)

Nawang gave an example of forming mixed-ability groups in her other class. She said:

> When I was teaching poetry musicalisation, the topic of the lesson, I chose firstly the leaders who could play music instruments. Then, the leaders would select their members in turns. Thus, every group had an expert, and the group was heterogeneous.

Although mixed-ability groups were not observed during classroom observations, Nawang acknowledged the benefits of such group composition.

Assessment. Nawang reported that assessment was an important part in using CL in a lesson. During initial interviews, she said, “Besides planning the lesson well for cooperative lesson, teachers should prepare the assessment, the things to be assessed, and so on.” She

suggested that she conducted some assessment such as individual and group assessment, and peer assessment. Nawang described how she set some criteria for group assessment and peer assessment depending on the lesson. Individual assessment criteria used by Nawang pertained to C 13 assessment. She stated that there were three things that teachers need to assess in C 13: attitude, knowledge, and skills. She elaborated:

> In the 2013 curriculum, it is stated that we [teachers] are to assess students' attitude. There are three kinds of assessment that we have to do. First is assessing the students' attitude. Second is assessing the students' skills, and the third is assessing students' knowledge. In assessing the students' attitude, we do not assess all of the attitude but we assess especially the students' engagement in the class. We write the attitudes' assessment in our journal. Particularly we pay attention to some unfavourable behaviours. For example, I gave some homework but some students did not do it. I would write the names of the students in this journal [showing the examples of her journal]. (Post-observation interviews)

Nawang also explained that there were two aspects of attitudinal assessment: spiritual and social. She explained:

> The spiritual criteria are praying before and after an activity, before and after a session; practising religion rituals, prayers and attending religion lesson; showing tolerance to other people with different religions; showing gratitude to God. The social aspects include being honest, disciplined, responsible, tolerant; doing gotong royong inside and outside the classroom; being polite; and confident. The knowledge assessments are understanding the lesson and applying the knowledge. (Post-observation interviews)

Nawang provided me with some documents of C 13 assessment in general and C 13 assessment in Indonesian language subject in particular. The C 13 assessment guidance for

junior secondary school stated that there are three aspects of assessment: attitude, knowledge, and skills (MoEC, 2015). The curriculum also suggested that the attitude assessment could be conducted through observations, self-assessment and peer assessment. Knowledge assessment could be carried out through written and oral tests, assignments and portfolios. Skills could be evaluated by assessing the quality of the task or project, the application of the task or project, and the portfolio.

During classroom observations, I observed that Nawang moved around and assessed the students. I described in Classroom Observation 1, "Nawang was moving around, talking to each group. She sometimes stopped a group working and asked the group to pay attention to her. She was writing on a piece of paper. She seemed to evaluate the groups." She confirmed her approach during post-observation interviews. She said, "While checking the groups if they had any questions, I also assessed the students." When asked about what she assessed, she explained, "I assessed a group based on some criteria. First, the group could work together and divide the jobs. Then, they should carry out the assigned task. Each of the members is responsible for their role."

Nawang reported that peer assessment was conducted in her class. She said "after presenting the result [of the discussion of the task], the group should be able to make some assessment of what they or the other groups have found or presented." Peer assessment was present in all four classroom observations. She informed the students about the peer assessment in the beginning of the lesson, and gave an assessment sheet for each group to assess the other groups' work.

> Nawang showed a slide that contained information about the task. Students were to make a group of six, practise the story, and perform the story. She also gave a scoring sheet. The scoring sheet was used to evaluate other groups' performances. Nawang showed the scoring criteria in a slide. She explained the scoring criteria one by one.

> She also gave examples of each point such as in using intonation in telling the story. (Classroom observation 3)

Nawang provided me with a copy of the assessment sheet in each classroom observation. During post-observation interviews, Nawang showed the results of a peer-assessment sheet filled out by the groups, and she described how the groups gave an evaluation to the other groups.

> The groups were assessed based on some criteria, scale one to four. One was the least and four was the best. The criteria were fluency in telling the story, the content of the story, intonation and clarity, group cooperation and confidence. The maximum score was 20. (Post-observation interviews)

Institutional support. Nawang reported that a group of Indonesian language subject teachers in MGMP had supported her in learning CL. She said, "MGMP has offered us [the members] a professional development for cooperative learning." She stated that MGMP forum was important for teachers to share instructional practices and challenges in teaching particularly in Indonesian language subject. She and other colleagues teaching Indonesian as a subject in her school met at least once a week, but informal sharing was conducted every day. She held the position as the head of MGMP Indonesian teachers in her school. Three members of the school-level MGMP were appointed to represent the school at the subdistrict level MGMP. The representatives met at least once a month. In this forum, Nawang held a position of a treasurer who managed and reported the budget in running the organisation. In the subdistrict forum, Nawang reported that the activities in the subdistrict included supporting teachers to improve their ability and skills in planning and evaluating teaching-learning activities, finding solutions to the problems faced by teachers in carrying out their daily responsibilities, and providing teachers with opportunities to share information and experience in teaching such as the implementation of CL in their classrooms.

In addition to the collegial support in MGMP, Nawang reported that she had learned more about CL through professional development conducted by USAID Prioritas. She commented:

> I learned how to prepare cooperative learning lessons for 3-day-workshop conducted by USAID [Prioritas]. We [the participants of the workshop] practised how to plan cooperative learning lesson [a lesson using cooperative learning] and applied the lesson in the class. Then, we evaluated it [the application of cooperative learning in the classroom]. (Phase 1 interviews)

Nawang added that in the workshop, she and her friends studied Think-Pair-Square. She was guided by her mentor, a university lecturer. She said, "I, with my two friends, learned a modification of Think-Pair-Share during the workshop. We were guided by a university lecturer who helped us with the lesson plan and observed our classroom practice on the third day of the workshop." She further commented, "Ibu Sukma [a pseudonym] observed us in the classroom, took some pictures, and wrote notes. She gave us some feedback."

Nawang stated that C 13 supported the application of CL, which had been compulsory to implement for Year 7; however, she had applied CL for Years 8 and 9 as well. She said:

> The 2013 curriculum supported the application of cooperative learning because teachers require applying 5M [scientific approach] steps of activities, one of which is to collect information or data about the topic and discuss the information in groups. In the groups, students are expected to construct knowledge of what they are learning. (Phase 1 interviews)

As discussed in Chapter 2, C 13 promotes a scientific approach in the instructional process. Nawang integrated the five steps in using CL. These five steps were present in the classroom observations. For example, in the second classroom observation, Nawang applied Think-Pair-Share in teaching about fable, the topic of the lesson. Fable is a short story that

conveys a moral. The main characters in a fable are personified animals, plants, or other nature objects. In Nawang's lesson, the personified characters were animals. First, in the thinking process, she instructed the groups to read a text and find information about the text, discuss and analyse the text by answering the questions within the group. After that, the groups shared the result of their discussion and analysis to the other groups.

Krisentia. Four themes emerged from eight larger categories from the initial interviews and six larger categories from the three data sources in Phase 2 (classroom observations, post-observation interviews, and field notes). The themes were *personal concept and knowledge of CL, peer coaching, group composition,* and *institutional challenge*s (see Appendix K for the development of larger categories and themes)

Personal concept and knowledge of CL. Krisentia claimed that she had practised CL before she attended CL professional development. She said, "I think I have applied cooperative learning since a long time ago before the [CL] workshops. I call it joyful learning, so learning is fun and we are happy [when learning]." She stated:

> It [CL] requires the students to work together to solve problems. I usually divide the class into some groups and I tell them that they do cooperative learning. The simplest cooperative learning is asking and answering questions with friends sitting at the same table or reading for his/her pair [sitting in the same table]. (Phase 1 interviews)

Krisentia's class had 16 tables. Each table was occupied by two students. She had 32 students. There were four rows, and each row consisted of four tables.

Krisentia suggested that, in principle, CL is about working together. She said, "It [CL] is about working together. The groups should not do the task individually. It [the task] should be a team work." She did not mention any CL elements. However, during classroom observations, I observed that the groups showed positive interdependence and individual accountability, and demonstrated positive interaction (see D. W. Johnson & Johnson, 2009;

S. Kagan & Kagan, 2009) when the high-achieving students coached the low-achieving students.

> After the group presentations, Krisentia asked the groups to read and discuss the lesson. She asked the group members to coach their group mates about the lesson. She informed the groups that there would be an individual quiz after the activity. The result of each individual test contributed the group score. (Classroom Observation 2)

D. W. Johnson and Johnson (2009) stated that individuals would achieve a higher result when they work on positive goal interdependence. In addition, I observed that positive interdependence and individual accountability were shown by most of the groups (one group did not demonstrate the elements) through the activity that they carried out in completing a task.

> Each of the members was responsible to answer at least one question. After finding the answers, each consulted the answers to the group before writing the answers on a small piece of paper or sticky notes. When finished, each member attached their sticky notes on the back of used calendar. When presenting their answers, although not all of the members presented but most of the members were responsible to read one answer. (Classroom Observation 3)

In the above activity, each group member worked individually, yet in the end, each student contributed to group's goal (i.e., completing the project or seeking answers to each question) and presenting it to the class. Jacobs, Renandya, and Power (2016) stated that, in CL, students do not always to work together; students occasionally may work alone in their group so as to contribute to the group's goal.

During the initial interviews, Krisentia mentioned that she learned some CL structures; however, she changed the names of the structures to Javanese language because she could not remember the name in English. She stated, "Mix Match is hard for me to

pronounce so I changed it into *Gatuk Entuk*. The students then will mix, and they will find their match." Krisentia explained that the CL structure, Gatuk Entuk, could be played in groups or with the whole class. The groups firstly made several series of two matching cards that contained materials from the lesson. When the cards were ready, the groups submitted them to Krisentia, and Krisentia shuffled the cards. Each student got one card. One student read their card and another student would shout the matching card. The winner was the group with the most matching cards. In its original conception, Mix N Match is a CL structure developed by Spencer Kagan (1994). To apply Mix N Match, a teacher or a pair of students makes two piles of cards that show a relationship such as a word and its definition, a picture and its description, or a historical event and its place of happening. Each student gets a random card. The teacher, then, says "mix," and the students find the match of their card. Thus, Mix N Match and Gatuk Entuk are identical in the procedure of how the structure is used.

Krisentia also used an adapted version of Inside-Outside Circle (S. Kagan, 1989). She named the structure *Sapi Kandang* which literally means "cows in a pen." She explained:

> I divide the class into two groups, *Sapi* [cows] and *Kandang* [a pen]. The cows get questions.… When the cows get a question, they say emmoooohhhh [meaning no in Javanese]. It's so funny [laughing].… Prior to this [the activity], I have asked my students to study the lesson, thus the questions are related to the lesson. (Phase 1 interviews)

Inside-Outside Circle is a method that can be used to build students' social, knowledge, and thinking skills (S. Kagan & Kagan, 2009). In circles, students rotate and face their new partners. The students are given time to ask and answer questions, and discuss. Each time they switch partner, they can discuss something new or the same question (S. Kagan & Kagan, 2009).

The Gatuk Entuk and Sapi Kandang structures were not practised in the classroom observations. I observed that Krisentia assigned the groups to discuss pictures and texts, or answer the questions from texts. The following are two examples of the task:

> The students were to study the pictures and tell her [Krisentia] when the actions of the pictures happened. She showed the pictures again and asked the students to work in pairs with their friends, and discussed the pictures [and] what and when they [the pictures] happened. Krisentia showed one picture at a time. She also asked the names of the people in the pictures. (Classroom Observation 1)
>
> Krisentia told the students that she would give them a text that she took from the current news. She then told them that they would work in a group of eight.… She gave out the text for each table [a table was occupied by two students]. She informed [the students] that the text was taken from the latest news. The students read in pairs, not in their group. She asked the students how much time they would need to read. Then she decided that they would read for 5 minutes. (Classroom Observation 3)

In post-observation interviews, Krisentia told me that she did not know the names of the structures she used in the classroom observations. She said, "I often don't know the name [of the structures], I use cooperative learning. As you know, I changed the names Gatuk Entuk, [and] Sapi Kandang."

Peer coaching. Prior to Phase 2 of the study, Krisentia invited me to see some extra activities that she initiated: Bank Mini, knitting group and hydroponic garden. In addition to that, she invited me to see some gotong royong (mutual assistance) activities, something that the school did every Friday. The gotong royong activities that the school did included cleaning the classrooms, the ditches surrounding the schools, and trimming the plants and trees. She wanted to show me how she encouraged her students to make use of their time, peer coach, and practise gotong royong.

> 7/12/2016. 9:15 am. Krisentia asked me to go with her to see the activity of Bank Mini. Bank Mini occupied a small room next to the music room. Six students greeted us: a boy, Year 7 student, who was acting as the director, two girls, Year 7 and 8 students, acting as the tellers, and three customers. (Field notes)

Krisentia stated that Bank Mini was not only a place for her students to apply their knowledge of banking but also to learn to manage their money. The activities of Bank Mini were saving and withdrawing money. Bank Mini was open from Mondays to Fridays during the two recesses at 9 to 9:15 a.m. and 12p.m. to 1 p.m. There were 25 volunteer students of whom three or four operated the bank every day, in turn. Bank Mini was assisted by a local bank, located not far from the school. Every Wednesday, a bank staff member from the local bank came and helped the students in running the bank. At the end of the day, the director would report and hand in the money to Krisentia. She deposited the money into the associate bank. The success of Bank Mini was acknowledged nationally. Krisentia was invited to share her achievements with other schools in Indonesia

Krisentia explained that the knitting community taught students cooperative activities. She said, “The Year 9 students are the experts, they teach Year 8 and 7 students, and so on. We have 30 students joining the knitting community.” Krisentia’s school conducted gotong royong to clean up the school environment every fortnight. The activity was carried out from 9 a.m. to 11 a.m. She said, “The students are accustomed to doing gotong royong. I would assign six students to clean up the ditch, six students to clean the windows, and so on.” Krisentia, some teachers, and her students also maintained the hydroponic garden during this time. They worked together to look after the garden.

Krisentia described in the first post-observation that she applied peer coaching in her home class. She reported:

> In the first day of school, I informed my class that I will treat everyone the same.… I ask my students to coach their friends who need help [in learning]. The smart ones should help the low-achieving in any situation. In the class [the observed class], there is Bella whom Ari helped in learning,… Ray is coached by Eddy, and Tania is coached by Temy [all names are pseudonyms]. (Post-observation interviews)

I observed that the students mentioned in the post-observation interviews were sitting at the same table. Krisentia also mentioned that she would follow up the mentees' progress with their mentors. She said:

> I would ask Eddy to report to me. For example, in one morning I called Eddy to come to my room and asked him what they [Ray and Eddy] had done. Eddy said, "I have helped him to do some homework." (Post-observation interviews)

Krisentia added that she also told other teachers about this peer coaching and the difficulties that the mentees had, so that her colleagues would know how to help them in learning. Peer coaching also worked when one student was absent. Krisentia would ask one of the students to coach the absent student about the lesson that she/he missed. When one of the students was absent for a month because of dengue fever and typhoid, Krisentia instructed some of her students to go to the sick student's house and help the sick student with the missing lesson.

Students' behaviour in groups, grouping challenges, and group composition.

Krisentia reported that her students had different characteristics. She said, "I have 32 students with different characteristics. Some of them are talkative. Some are quiet. I have some disobedient students who are rejected by their friends when grouping." When I asked her what she would do with them (the talkative, quiet, and disobedient students), she answered, "If the talkative students gather in a group, I would split them [in different groups]. If they are in the same group, they will chat about something else [not the task]." She also reported that one of her students talked too loudly and was uncooperative so that his/her

friends were reluctant to be his/her group. Krisentia reported, "For example, one student of mine, Anna (pseudonym), always borrows things from her friends and talks too loud. So, her friends are reluctant to take her as a group member." During Classroom Observation 3, I observed that Group 8 consisted of one dominating student who did everything, three girls who did not speak during group work, and a boy who was reading answers for the dominating girl who was writing the answers on a piece of paper. I wrote in my field note:

> I observed that Group 8 did not fully show cooperation. Three female members were doing the task individually. They were not talking to each other. One girl was writing on an A3 paper [the answers of the questions]. Her boyfriend was reading a course book which contained the answers, and he was reading the answers for the dominating girl. (Field notes)

During post-observation interviews, Krisentia confirmed that the three girls in Group 8 were quiet students, thus the dominating girl would ignore them.

Krisentia reported that she applied some grouping composition in her class using CL. She asked her students to count from 1 to 5. Then, students numbered 1 made a group, students numbered 2 made a further group, and so on. She requested that the students make a group based on the place where they sit because this group composition required less time. She commented:

> It [the grouping technique] is fast. The students don't have to move, they just turn their chair. Communication is easier if they are close friends [close friends tended to sit in the same table]. Thus it is faster [than other techniques]. (Post-observation interviews)

However, she added that this group composition had a weakness. Since the groups were often friendship groups, they tended to get off the topic. During the classroom observation, I

noted that she used a different group composition from what she reported in the initial interviews or post-observation interviews.

> Krisentia asked five students to come forward to be the leaders of the groups. Four girls and one boy volunteered to be the leaders. Then, the rest of the students approached the leaders to be selected as their members. (Classroom Observation 3)

For a group composition, Krisentia required the group to be mixed-gender group. She said, "The most important is it [the group] consists of boys and girls." In Classroom Observation 3, I observed that Krisentia asked some boys to move to another group because the groups had no girls.

> Krisentia was counting from 1 to 5 when the students were moving to their groups. She also reminded the students to make the groups consisting of girls and boys. Krisentia had to interfere when there was a group consisting of only boys but the other group had more girls. Then she asked some members to swap. (Classroom Observation 3)

In post-observation interviews, Krisentia added, "I give them some choices [to choose their group mates]. However, I always ask them to work with boys and girls [in a group]." She reported that the students tend to work with the same gender, and she wanted her students to experience working with mixed-gender groups. She said, "They [boys and girls] should be able to work together and get along well. They [the students] will understand that boys can be rough sometimes, and the girls can be so pampered."

Krisentia reported that she had problems when she let her students choose their own group. She said, "Some students would rush to go to one group at the same time and fight to stay in that group. However, some students did not get any groups." Krisentia described:

> There are some students that have been rejected to join in a group.… I don't know why they [the other students] rejected them. I would group them [the rejected

> students] into one group, and I said "come and join my group" so that they would feel protected. (Initial interviews)

During Classroom Observation 4, Krisentia asked her students to make a group based on the place they sat, except on one occasion when she chose the leaders of the groups. I did not observe any "rejected students" during the group composition.

Institutional challenges. Krisentia reported that she had very few problems in applying CL. However, she mentioned that her biggest challenge was managing the teaching time due to the need to prepare Year 9 students for exams. She said, "I don't really have problems in using cooperative learning. But there are some activities that reduce my allocated teaching time such as the exams yesterday [a day before the initial interviews, the school had exams for Year 9 students]." Krisentia chose one of the Year 9 classes for the classroom observations. She chose the class because she had applied CL in the class for 6 months. Year 9 was the final year of junior secondary school level. Year 9 students had to pass a series of exams: exams conducted by the school, mock national exams conducted by the district, and the national examination conducted by the MoEC. When the classroom observations were conducted, Year 9 students were doing mock national exams run by the district, which took their allocated learning time for 2 hours from 7 a.m. to 9 a.m. The mock national exams ran for 2 weeks. Krisentia had to postpone two classroom observations due to the change of the schedule.

Although Krisentia did not mention having problems with the materials for Year 9 students during the initial interviews, during post-observation interviews she admitted that she had had a challenge in finishing the materials. She said:

> Yesterday [during Classroom Observation 3], I asked the students to make a group of eight because the lesson was easy, and they could finish the task fast. The more

> people work in a group, the faster they finish. I have to finish the topic. You see, for Year 9, there are eight topics that I have to cover. (Post-observation interviews)

For social science, there were eight topics of which each topic was divided into several subtopics. The first four topics were discussed in Semester 1 and the other four topics were covered in Semester 2. During Classroom Observation 3, I felt that the groups were doing the task quickly. I observed:

> that each member had a job to do. Each of them answered one question. Each member of Group 1 answered each question in a colourful sticky note. Two members were occasionally discussing the task. Others were busy writing. Group 2 were doing similar to Group 1. When I came to their group, two members were discussing the answers, two members were writing on the A3 paper [they might be the secretaries], two members were writing the answers on a sticky note. I also observed when they finished writing the answer; they gave the answers to the secretary. The two secretaries divided the A3 paper into two and they wrote in different side. (Classroom Observation 3)

Discussion

The data analysis of data collected in Phase 1 and Phase 2 has generated both similar and unique themes for each of the four teacher cases. Table 10 describes the commonalities and differences of the themes among the participants.

Table 10

The Commonalities and Differences of Themes Among the Participants

Themes	Jati	Budi	Nawang	Krisentia
Personal concept and knowledge of CL	√	√	√	√
Students' behaviour in groups and grouping challenges	√	√	x	√

Themes	Jati	Budi	Nawang	Krisentia
Students' behaviour in groups and group composition	x	x	√	√
Institutional support and challenges	√	x	√	x
Institutional challenges	x	√	x	√
Authority and control of the class	√	x	x	x
Personal and pedagogical change	x	√	x	x
Conflicting roles	x	√	x	x
Planning for using CL	x	x	√	x
Assessment	x	x	√	x
Peer coaching	x	x	x	√

Note. √ = commonality, x = difference

As indicated in Table 10, the theme *personal concept and knowledge of CL* was shared by all participants. Jati, Budi, and Krisentia experienced grouping challenges in their classrooms and their students showed uncooperative behaviour in groups. However, although Nawang had problems with grouping, her students showed cooperative behaviour. Nawang and Krisentia set some criteria for grouping such as mixed-gender groups and mixed-ability groups. Both Jati and Nawang shared the theme *institutional support and challenges*, and both Budi and Krisentia shared the same theme *institutional challenges*. There were some themes, however, that were not shared among the participants such as *authority and control of the class*, *personal and pedagogical change*, *conflicting roles*, *planning for using CL*, *assessment*, and *peer coaching*.

Implementation of cooperative learning elements. D. W. Johnson and Johnson (2008) emphasised the importance of understanding the five elements of CL for teachers to implement CL effectively in the classrooms. The evidence in this study showed that the teachers had difficulties defining the elements underlying CL as described in current

literature. Most of the teachers acknowledged that CL should include interaction and equal sharing of jobs yet none of the participants referred to D. W. Johnson and Johnson's (2009) elements of CL. The teachers might not necessarily remember the language but they enact some of the elements. Through classroom observations, I recognised that they established at least four elements of CL, positive interdependence, individual accountability, face-to-face promotive interaction, and interpersonal and small-group skills, through group roles, peer assessment, seating arrangement and group supervision.

Positive interdependence was practised when the teachers assigned the group members roles. The roles varied from readers, writers, and presenters in one lesson to characters of a story in which the groups performed a drama with different characters. Thus, each of group members was responsible for doing one aspect of the assignment. Other evidence of maintaining the positive interdependence was through task interdependence (see D. W. Johnson & Johnson, 2009). The tasks required each member to have a role so that the group could finish the task in an allocated time. For example, in one of Krisentia's classroom observations, in a group of six, two members searched for answers to the assigned questions, two members wrote the answers on colourful sticky notes while the other two members were responsible for writing the results of the discussion on the project sheet. At the end of the task, two members, as representative of the group, were to present the completed project. Thus, without each member's effort and responsibility to complete the task, the group would not be able to present the group project at the end of the session. The degree of positive interdependence, however, was not observed. Further research is required to study the degree of positive interdependence among the students in a group.

When every member of the group is responsible for his or her own task in order to contribute to the group's goal and ensure that every member completes their task, individual accountability increases (Gillies, 2007; D. W. Johnson & Johnson, 2009). In this current

study, individual accountability was observed through the division of roles which resulted in an increase of responsibility for each group member. Gillies (2007) stated that the shared responsibility that a group creates elevates the feeling of being accountable and the motivation to perform well. Individual accountability can be established through peer, group, and teacher assessment in regard to the student contribution to the group (Gillies, 2007). The evidence from the current study showed that peer assessment was utilised to help the students on the task, to help the group understand the task, and/or to help students improve the task. For example, Nawang demonstrated a peer-assessment strategy that determined how the group performed certain aspects of the task and how the group performed the task overall. The group was to score 4 out of 4 if all of the members retold the story with good intonation and expression. The group was to score 2 out of 4 if only a few of the group met the criteria. The group assessed their own group and the performance of the other groups. This kind of accountability motivated each member to perform well in the task. Group assessment could be conducted through the agreement on certain tasks or roles with the group providing feedback on the task performance (Gillies, 2007; D. W. Johnson & Johnson, 2009). Group assessment in this study was observed through the division of roles. However, I was unable to observe how the group provided feedback. Teacher assessment was conducted in every session by all teacher cases. The students were observed to give feedback regarding group processing during the group work and the group presentation. For example, Jati recommended a student in a group share her ideas with the other members, and Jati's actions were confirmed during post-observation interviews.

The findings of the current study suggested that promotive interaction, the third element of CL, was demonstrated through the seating arrangement and the four teacher cases monitoring the groups' involvement. The four cases facilitated the students' interaction in groups by ensuring that they sat face to face while participating in discussion with their group

mates. They also supervised and encouraged the groups to promote positive interaction among group members. However, I observed that oppositional interaction, as opposed to promotive interaction, occurred in some instances because of the group composition. For example, in Jati's class, when a group consisted of five boys and one girl, I observed that the girl worked independently without any interaction with other members. She worked independently, even though Jati had encouraged her to engage in the group discussion. The boys seemed to not include the girl in the group discussion. However, in Budi's class, when a group consisted of three girls and one boy, the girls involved him in the discussion. These findings are consistent with previous research (Webb, 1985). Webb (1985) reported that in the majority-boy group, the boys focused their attention on the other boys and tended to ignore the girls, while in the majority-girl group, the girls gave more explanations and information to the boy than expected. This present study, thus, suggests that in fostering promotive interaction, teachers need to consider the group composition.

When promotive interaction occurs, the other two elements of CL, appropriate social skills and group processing, are established (D. W. Johnson & Johnson, 2017). The findings showed that the four cases attempted to establish social skills and group processing among the members of the groups through the use of movie clips related to cooperative values, peer mentoring, direct supervision, and group orientation. Budi introduced the cooperative norms and the importance of cooperation through videos. As observed in Classroom Observation 3, he showed a short movie that taught the students the importance of working together to achieve a common goal. Krisentia encouraged the cooperative norms through peer mentoring in the classrooms, ensuring that the low achievers were on task, and, for the non-academic activities, assigning the senior students to mentor their juniors. Jati conducted a direct approach, working on the problematic individual or group, encouraging his students to improve social skills and checking if his students gave feedback and support. Nawang

established the two elements of CL by giving her students group orientation. She trained her students how to cooperate in the groups thus her students did not encounter any conflicts or difficulties with cooperating as they worked in small groups. Nawang let the groups lead their own discussion and solve the problems. Since the classroom observations that I conducted focused on the participating teachers, and how they established the elements of CL, the classroom observations did not capture aspects of how the students supported or discouraged each other in social skills or in group processing, and giving each other feedback on their group performance. Therefore, further research is required to see how the students promoted social skills and processed their own learning in achieving the group goal.

Cooperative learning structures. During the initial interviews, the four teachers indicated that they had used CL structures such as Jigsaw, Think-Pair-Share, and Group Investigation. However, I observed only one CL structure, Think-Pair-Share, was used by Nawang in one of her classroom observations. In general, the teachers asked the students to work in a small group to discuss answers to some questions from the textbooks or prepared by the teachers. At the end of the discussions, each group or most groups, in turn, came to the front of the class to tell the class their answers to the questions. After the group presentation, other groups would ask questions, give feedback, or offer suggestions. The four cases mentioned that they did not know the names of the structures they used, or they just simply identified the structures like a group discussion. They reported that they could not remember the names of the structures because they learned many structures during CL professional development. These findings confirmed that the varieties of CL structures led to teachers' confusion in using the structures (see Dyson et al. 2016; Sharan, 2010). Dyson et al. (2016) reported that the teachers in their study were confused by the variations of CL structures and in choosing the suitable structures for the physical education setting. Dyson and Rubin (2003) and Goodyear and Casey (2015) recommended that teachers focus on one

or two CL structures at a time as this allows the teachers to move towards being more student-centred in their lessons.

The findings revealed that the teachers in this current study were uncertain as to whether they were using CL or other student-centred approaches. During the post-observation interviews, Nawang and Budi confirmed that they used problem-based learning in one of their classroom observations. They reported that they employed several small-group learning approaches such as problem-based learning and contextual learning and teaching. In regard to the teachers' uncertainty about using CL or problem-based learning, Davidson and Major (2014) pointed out that both of the approaches have many similarities so that teachers might find it challenging to distinguish between the two approaches. Davidson and Major (2014) claimed, however, that when the two approaches were used together in sequence this would offer a powerful approach to develop students' intellectual and social skills. The language factor might influence the teachers forgetting the names of the structures. The CL structures were in English which is not the teachers' first language. It is instructive that Krisentia changed two CL structure names into her first language (Javanese) and the Indonesian language because she had difficulties in pronouncing the English names of the structures.

Group orientation. Cohen and Lotan (2014) recommended that teachers conduct an orientation session in which students are introduced to or reminded of the cooperative norms and roles and the central concepts of the task. These orientations are to prepare the students for the tasks and the challenges of working together. Dyson et al. (2016) and Gillies and Boyle's (2011) teacher participants in their studies reported that students need to learn appropriate social skills to work in small groups. The findings of the current study revealed that only Nawang conducted task and group orientation. Nawang gave step-by-step procedures of the tasks and informed her students how to cooperate with their group mates.

She paid particular attention to the careful planning of the CL lesson in order to gain a very high level of students' involvement in groups. In addition to the tasks and cooperative norms, she gave some orientations to peer assessment, informing the groups about the criteria and the procedures of the assessment. Consequently, compared to the other three teacher cases, she had fewer problems with her students' behaviour and engagement in the group, and higher task completion. These findings support Golub and Buchs' (2014) study. Golub and Buchs (2014) reported that giving the students a cooperative norm orientation improved positive interactions. The students pay more attention, give more support, and ask more questions of their group mates.

Group composition. The evidence in this study showed that the four teacher cases acknowledged the benefits of heterogeneous groups. Previous research found that establishing heterogeneous groups in CL may cater to the diverse needs of the students (Dyson & Grineski, 2001; Warring, Johnson, Maruyama, & Johnson, 1985), and impact students' performances (Hsiung, 2011). However, the teacher cases in this study had difficulties in forming heterogeneous groups. Forming heterogeneous groups required time in deciding the level of students' proficiency and students' needs because the groups consisted of high-achieving and low-achieving students, different genders, and different needs. Having heterogeneous groups also meant that the teachers had to spend extra time on the seating arrangements. While managing time was important for the teachers because they struggled with finishing the lesson materials and preparing their students for tests, the teachers allowed friendship choice to dominate, which meant that teachers let the students choose their own group.

The teachers believed that friendship groups yielded more positive social interaction among group members which could increase active involvement in the tasks. This finding is supported by Gillies and Boyle's (2010) study which reveals that friendship-based groups

provide students with higher motivation to achieve group goals. In addition, the current study found that friendship groups did not take much time to arrange because the students tend to sit with their close friends, thus saving teaching time. The teachers' preference for friendship group composition was consistent with previous research findings. Kutnick, Blatchford, and Baines (2005) found that the teachers in their study legitimised friendship groups chosen by their students, and friendship groups impacted on students' learning outcomes. Echoing Kutnick et al.'s (2005) findings, Phuong-Mai, Elliott, Terlouw, and Pilot (2009) and Thanh and Gillies (2010) reported that friendship groups were more culturally responsive for Vietnamese students who had a strong sense of intimacy, group solidarity, and mutual support. South-East Asian countries such as Vietnam, Indonesia, and Malaysia are identified as having collectivist cultures in which cooperation is based on trust and identity (Hofstede & Hofstede, 2005; Trompenaars & Hampden-Turner, 1998). Trust and identity are closely related because the condition for trust is identification with the group (Brodt & Korsgaard, 2003). Brodt and Korsgaard (2003) argued that trust is determined by the extent to which individuals define themselves in terms of particular group membership. Thus, in a collectivist society such as Indonesia, the new group should be based on trust, supporting the identity of each member. In the context of education in Indonesia, a group that supports personal relationships, such as friendship groups has a more powerful impact in determining the nature of group cooperation, which could yield more effective group processing.

Types of cooperative learning. In regard to D. W. Johnson and Johnson's (2008) CL types, the teacher cases practised "informal cooperative learning" (p. 29). D. W. Johnson and Johnson (2008) defined informal CL groups as temporary groups that lasted from a short period to one class session. Informal CL aimed to ensure active cognitive processing during a lesson. In this present study, the classroom observations revealed that the teacher cases would normally start with a review of the previous lesson, an introduction to the new lesson,

and a short lecture. The teachers then grouped their students into anything from dyads, the smallest group, to octets, the biggest number in a group, and gave the groups a task. The groups lasted for a single activity or for the whole-class session. The tasks ranged from (a) a discussion on certain topics or questions prepared by the teachers, students, or the textbooks, (b) a presentation on certain topics or the comprehension of texts or lessons, to (c) a performance. Prior to doing the tasks, the teachers gave instructions about the tasks. At the end of the tasks, the teachers asked the groups to present the results of the discussion either on a piece of paper or orally. After the presentation of the task, the teachers encouraged the other groups to give reactions to the information presented. The teacher instructional procedures in using small-group learning were consistent with D. W. Johnson and Johnson's (2008) informal CL procedures.

The teacher cases in this study practised informal CL because, firstly, the nature of group composition that the participants subscribed to was mostly the friendship group. This condition made formal cooperative learning and cooperative base groups difficult to implement because both forms require heterogeneous groups to work effectively (see Antil et al., 1998; D. W. Johnson & Johnson, 2008). Moreover, the Phase 1 interview data of this current study revealed that the groups always changed in every group activity or every session which indicated that the teachers implemented informal cooperative learning. Secondly, the teachers did not use formal CL or cooperative-based groups because both forms required the teachers to provide more time to group the students in heterogeneous groups, design a task that promotes the elements of CL, evaluate each element of CL, and assess the group learning. As discussed earlier, time for CL groups was limited due to the need for material coverage and test preparation. Thirdly, the teachers received insufficient information about the formal CL and cooperative base groups from their professional learning and development. The data from the professional development documents revealed

that formal CL and cooperative base groups were not introduced. The CL professional development that the teachers attended focused on CL structures.

Congruence between teachers' beliefs about and practice of cooperative learning. Although there was some degree of congruence between the teacher cases' stated beliefs and their observed classroom behaviour, several instances of conflicts between the teachers' beliefs about CL and their actual practice were identified in the analysis, confirming Pajares' (1992) view that stated beliefs are an unreliable indicator of actual practice. For instance, all of the teacher cases believed that heterogeneous groups were ideal to improve students' academic outcomes, yet little evidence of heterogeneous groups was observed during classroom observations. Moreover, two of the teachers' stated beliefs indicated that they subscribed to CL because CL helped students to construct their own knowledge. However, the actual practice showed that they used a lecture approach to explain a concept because they believed that the students would not understand the concept if they had to study it by themselves.

Argyris and Schön (1974) described how teachers' espoused theory and theory-in-use exist side by side. The difference between teachers' espoused theory and their theory-in-use, and especially the fact that the teachers may remain completely unaware of the incongruence between them, is one possible explanation for the differences between teachers' beliefs and practice (Argyris & Schön, 1974). This difference might explain why the teacher cases in this current study were unable to describe the reasons behind their routine instructional practices. The teachers stated that they used CL structures and they were able to describe them. However, the teachers confirmed that the grouping strategies that they used were not CL structures. Their theory-in-use had become routinised so they were unable to explain the beliefs which controlled their actions.

Buehl and Beck (2015) argued that the inconsistencies between the teachers' beliefs and practices are influenced by internal and external factors such as teachers' other beliefs, classroom-context, and national-context factors. The findings in this current study revealed that the lack of congruence between the teacher cases' beliefs and practice regarding CL in this current study was complex, influenced by many factors such as teachers' beliefs about learning and beliefs about students, and the complexity of classroom and school contexts, curriculum, accountability, and cultural values. These factors supported and hindered the teachers implementing CL. To understand how these factors influence teachers to practice their beliefs about CL, a holistic analysis through the ecological model (Bronfenbrenner, 1979) is presented in the next chapter.

Chapter Six: General Discussion

In this final chapter, I bring together the findings of both phases, and describe how this study provides significant contributions to the understanding of teachers' beliefs and the implementation of CL in the context of Indonesia. I also describe how the current study makes a unique contribution by offering the possibility of a context-sensitive ecological model that aids understanding of teachers' beliefs and practice not only in the current context but with potential adaptation to other contexts. I start by revisiting the two phases and presenting the findings. Then, the findings of the two phases are discussed in the frame of the ecological model (Bronfenbrenner, 1979). This chapter is brought to a close with an exploration of further contributions and implications of the study, consideration of its limitations, directions for further studies, and a conclusion.

Revisiting Phase 1 and Phase 2

This study sought to understand teachers' beliefs about and practice of CL, and the implementation of CL in the Indonesian context. Thus, the study started with interviews with the aim of understanding the espoused beliefs about CL of 18 secondary teachers who had experience using CL. Using a thematic analysis technique (Braun & Clarke, 2006), a range of subthemes and themes was generated and classified into internal factors (sources of CL knowledge, and experience in learning and using CL) and external factors (students, classroom, school, curriculum, and cultures) affecting teachers' beliefs about CL. These findings revealed that teachers' beliefs about CL were not isolated; they were influenced by factors that were dynamic and interactive. The findings of Phase 1 provoked a new research direction that included investigating the practice of the teachers' beliefs in the Indonesian context. This is important because previous research on teachers' beliefs revealed that beliefs were incongruent with practice (Fives & Buehl, 2012; Richardson, 1996). Earlier seminal

researchers investigating teachers' beliefs about CL did not study how teachers practised their beliefs (Abrami et al., 2004; Lumpe et al., 1998). Phase 2 was aimed at investigating how the teachers implement the beliefs about CL in practice and whether the teachers' beliefs about CL were congruent with their practice. Four case study teachers participating in Phase 1 were selected and studied regarding their enacted beliefs and the implementation of CL. Multiple forms of data (classroom observations, post-classroom observation interviews, and field notes) were gathered to triangulate findings. A logical and systematic data analysis process, using Miles et al.'s (2014) framework, was conducted to evaluate the data of each case study teacher. The four cases have helped me understand the relationship between their beliefs and practice regarding CL, and secondly, the influence of the Indonesian context on the teachers' implementation of CL. The findings indicated that the relationship between beliefs and practice was complex, affected by multi-layered ecosystems. Thus, to better understand the beliefs and practice in this study's context, I discuss the findings within the framework of an ecological system (Bronfenbrenner, 1979).

Understanding Teachers' Beliefs About and Practice of Cooperative Learning: An Ecological Perspective

Indonesian teachers' beliefs and practices of CL exist in a unique context. The current findings revealed a more complex amalgam of factors than those of Buehl and Beck's (2015) study. Drawing from Bronfenbrenner's (1989) ecological model, Buehl and Beck (2015) identified multiple layers of internal factors such as teachers' other beliefs, knowledge, self-awareness and self-reflection, and external factors that included classroom-, school-, national-, and district-contexts. My study, however, reveals more complex contexts influencing teachers' beliefs and practice. Those contexts are nested in the interactive environment forming the ecological system, starting from the immediate context such as students and classroom, then moving to bigger settings and contexts such as school, regional,

national and cultural. The Indonesian teachers' beliefs and practices regarding CL and the contexts influencing them are presented in Figure 11.

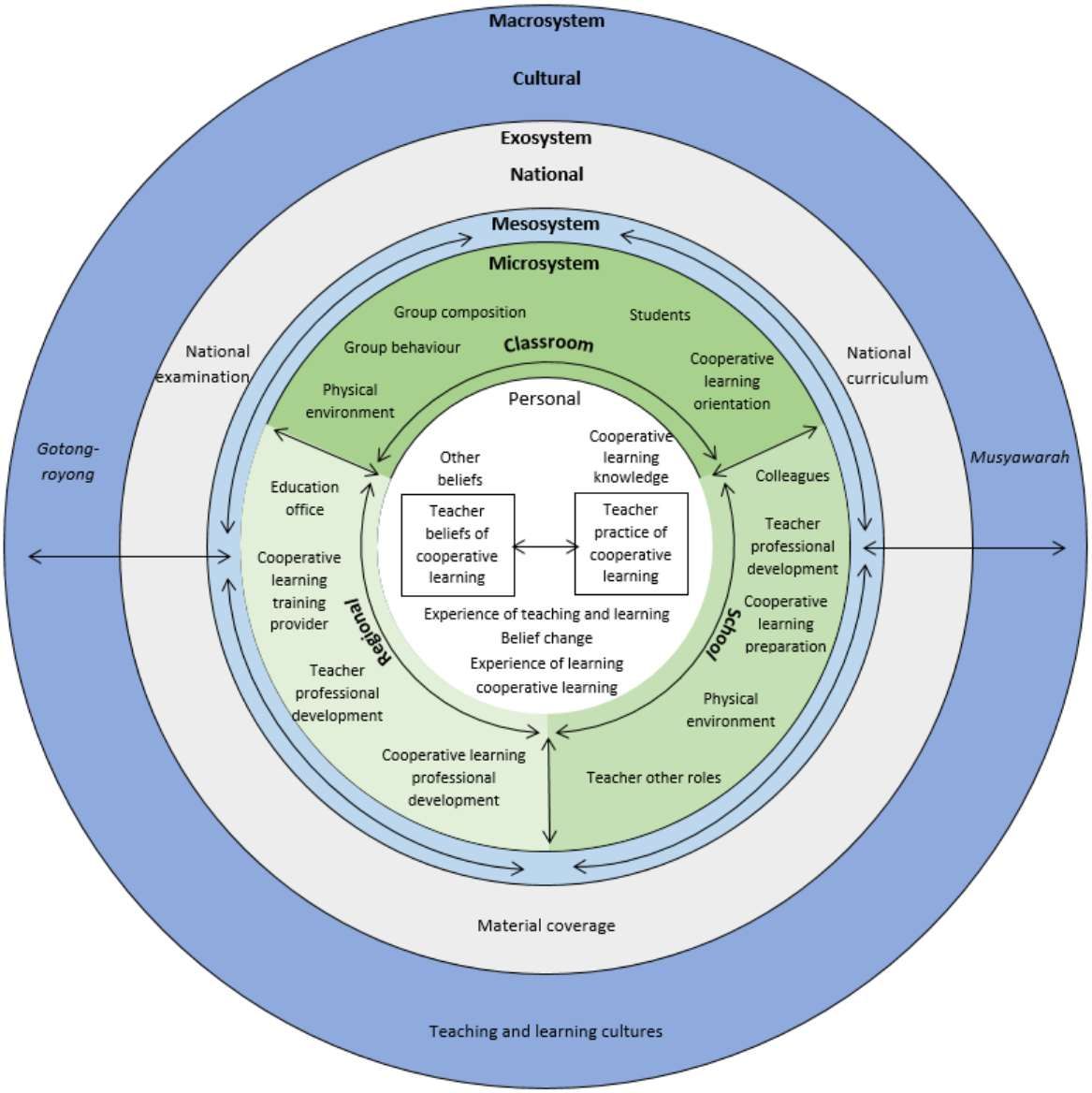

Figure 11. The ecological model of Indonesian teachers' beliefs about and practice of cooperative learning.

This model illustrates the dynamic interconnectedness of the ecological layers that influence the teachers' beliefs about, and practice of, CL. In this conceptual framework, the personal influences in the centre include teachers' other beliefs (e.g., beliefs about students' needs and peer coaching), belief change, teaching and learning experience, CL knowledge, and experience of learning CL. The microsystem comprises immediate activities, roles and

relations in which the teachers engaged, in the classroom, school and regional teacher community. The mesosystem shows interrelations among the multiple settings nested in the microsystem. Bronfenbrenner (1979) stated that a mesosystem is "a system of microsystem" (p. 25). The settings in the mesosystem of this study that interact with the microsystem include classroom, school, and regional microsystems.

The more distal environment is the exosystem. This system includes factors like material coverage, national curriculum and exams that may intersect directly or indirectly with the teachers' beliefs and practice about CL nested in the microsystem (see Bronfenbrenner, 1979). The macrosystem constitutes the outer ring of the environment representing contexts, which are increasingly distal; they nonetheless remain pertinent in shaping teachers' beliefs and practice regarding CL. To understand teachers' beliefs and practice about CL, then, one might need to look at personal context, explore the role of micro-, meso-, exo-, and macro-systems on influencing beliefs and practice, and explore the interconnectedness among the systems. The discussion of the ecological systems is as follows.

The personal contexts. Personal context constitutes factors that influence teachers' beliefs and practice within the teachers themselves. It includes teachers' knowledge of CL, teachers' experiences in learning and teaching, experiences in learning CL, change of beliefs, and other beliefs. The findings confirm previous research that teacher knowledge is one of the crucial internal determinants of belief enactment (Kang, 2008). In the context of this study, the teachers' knowledge about CL affected the teachers when implementing the elements of CL, designing the objectives of the group goals, selecting tasks, composing groups, and constructing group assessments. The teachers demonstrated insufficient knowledge of CL elements (positive interdependence, individual accountability, promotive interaction, interpersonal and small group skills, and group processing), which mediated the

effectiveness of CL implementation (see D. W. Johnson & Johnson, 2008). The teachers' insufficient knowledge of preparing students for cooperative group work, establishing group goals, tasks, and group composition, and peer assessment, results in grouping challenges, ineffective task completion, and defective group composition and assessment. The latter findings support Cohen and Lotan's (2014) study finding that the first step in setting up a CL class is to prepare students for cooperative group situations, then set the learning goals, design group tasks and group composition, and plan assessment so that students can constantly evaluate their group and group product.

Further, the findings confirmed that teachers' beliefs are shaped by various factors and elements in the life-long process of learning to teach (Lortie, 2002), past and present experiences (Powell, 1992), and the kind of teaching teachers had experienced as students (Richardson, 2003). Regarding the findings of this study, the teachers' experiences as students and as teachers influenced their decisions in using CL. Jati and Budi, for instance, did not use CL for difficult topics because they did not believe their students' competence to master the subject content. They believed that they were the source of knowledge because their teachers had been, in their own schooling. Their memories persisted as an important source of beliefs that contradicted constructivism, the essential principle of CL. This finding contradicts the study by Siegel (2005) who reported that the teachers in her study used CL for harder topics so that the students could learn from each other.

The findings of the current study indicated that through classroom experience, teachers' beliefs might change and develop. Jati, for example, recognised that he had developed a more student-centred approach after years of teaching. Jati's beliefs about the student-centred approach developed through CL professional development that he attended and colleague sharing ideas during working groups. These findings are in line with previous studies (Beswick, 2008; Brownlee, 2003). Brownlee (2003) found that after 3 years of

teaching experience, the teachers in their study became more constructivist in their epistemological beliefs. The findings of my study also showed that the participants' beliefs of didacticism, the term defined by Banning (2005) to show that teaching involved only lecturing, changed into a more student-centred approach after a learning programme or collegial sharing. Although the current study did not focus on the change of the teachers' beliefs, the findings were consistent with Brownlee's (2003) study, as teachers such as Jati and Budi recognised that they had developed a more student-centred teaching approach after years of teaching and CL professional development. Further, Rama, one of the teacher participants in Phase 1, stated that his beliefs about pedagogy changed after observing his colleague's sharing of CL structures. He realised that teaching would be more meaningful to the students if he involved them in their own learning. These findings were consistent with Beswick's (2008) study that learning programmes as short as 3 hours could shift teachers' beliefs. Regarding Rama's case, this study also leads to a significant finding that teachers might change if they have good role models.

It is evident that teachers' other beliefs such as beliefs about students' needs and peer coaching affect the use of CL by the teachers in this study. As a mathematics teacher, Budi believed that his students needed a more relaxing and supportive environment to learn mathematics. He believed that by giving the students such an environment, the students would be engaged more in their learning. His beliefs about students' needs in learning were unique to his own teaching context, and his beliefs supported him to use CL because CL enables students to be involved in constructing knowledge. Krisentia's beliefs about peer coaching had influenced her to subscribe to CL. Krisentia used peer coaching prior to learning CL to help the low-achiever students to keep up with the other students academically. She believed that giving her bright students the opportunity to be mentors to their peers would create a mutual benefit that increased their learning and developed the

students' sense of sharing and cooperation, values that Indonesians hold and practise. Peer coaching contributes to the success of the implementation of CL because it promotes positive interdependence and promotive interaction (S. Kagan & Kagan, 2009). The low-achiever student can learn the subject content more intensively with their peer coach. As well, by teaching his/her peer, the coach is reviewing the lesson thus helping him understand the lesson better. The interaction between the coach and the mentee is thus positively interactive.

The microsystem. Located in the inner core of ecological model, the microsystem gives prominence to the process of the development of teachers' beliefs. The microsystem is the first immediate environment with which the teachers engaged. It constitutes the classroom, the school, and regional contexts.

The classroom context. The classroom constitutes students and the physical environment. It is proposed that the teachers' beliefs and the practice of their beliefs about CL occur as a process of the reciprocal interactions between the teachers and their students and the objects in the classroom. The students' responses to CL, and the way the students behave in groups, are significant influences on the teachers to practise their beliefs about CL. The findings revealed that the teachers subscribed to CL because of its social outcomes, and CL made the students motivated, confident, independent, and engaged. Further, all teachers reported that the students' response to CL was mostly positive, although a few students preferred a teacher-directed approach. However, the findings also revealed that the teachers encountered some challenges when the students worked in groups. The students' disposition of being passive and reluctant to be engaged in group activities constrained the teachers' use of CL. The issues with misbehaviour might be due to insufficient student orientation to cooperative norms and objectives of the group task (see Cohen & Lotan, 2014); or a lack of interpersonal skills and small-group processing skills (see D. W. Johnson & Johnson, 2008). Previous research on group orientation has demonstrated that training students in the skills

required to cooperate in groups resulted in students who were more cooperative and responsive to their peers' needs and improved the students' outcomes (Cohen, 1994; Gillies & Ashman, 1996).

The findings suggest that the physical environment of the classroom restricts the teachers' use of CL. In many instances, the teachers perceived that their classroom layout was "traditional" (Amedeo & Dyck, 2003, p. 325) and not conducive to working in groups. The definition of traditional classroom in Amedeo and Dyck's (2003) study is similar to the context of my study. The wooden tables were lined up in rows facing the whiteboard. Two students occupied each table. With this classroom layout, the teachers reported that it took time to move the tables to create an environment in which the students could have face-to-face interaction. Consequently, the teachers created groups based on convenience whereby the students made a group next to the tables and chairs so they could still maintain the students' direct interaction and manage the time of the lesson. This condition led the teachers to use friendship-based group composition—a group consisting of close friends—because close friends tend to sit close to each other. The findings suggest that friendship-based groups create positive interactions among group members that could increase task engagement. This finding is supported by Phuong-Mai et al. (2009) and Thanh and Gillies (2010) who reported that due to the cultural characteristics of Asian students, groups should be composed of students who know each other well.

The school context. Each teacher's beliefs about and practice of CL was influenced dynamically by school context such as colleagues, the physical school environment, and the teachers' other roles in the school. All teachers in Phase 1 had been exposed to CL informally from conversations with colleagues and MGMP (subject-teacher discussion forum) at the school level. Rama, for example, had changed his beliefs about teaching physics after attending a CL sharing session presented by one of his friends. He used to

believe that his students did not like physics because physics was not a fun subject. However, after he used CL in his class, he felt that his students enjoyed physics a lot more. Nawang and her Indonesian language-teacher colleagues benefited from CL sharing conducted by the MGMP at the school level. This informal and formal CL sharing with colleagues encouraged the teachers to use CL. These findings support Lumpe et al.'s (1998) study which reported that external support from a variety of groups influenced teachers' intention to subscribe to CL in their own classrooms. Furthermore, the findings of this current study reconfirmed that teachers did not shape their beliefs in isolation because they worked collectively with other teachers in a specific context (Tschannen-Moran et al., 2015).

Physical school environments appeared to have a strong influence on the implementation of CL, particularly in School A where the participants experienced challenges in using CL because the teaching time was reduced due to school construction work. The school construction work took several months, leaving the teachers limited time to cover the lesson materials, let alone use CL. Although the condition was contextual, the findings offer important insights related to the literature about the effect of the school physical environment on teachers' beliefs and practice, particularly in regard to CL.

In addition, the teachers' other roles in the school organisation seemed to conflict with their role as a teacher. Budi, for example, spent much time doing administrative tasks as a vice principal, leaving his class with other teacher relievers or with no supervision. This meant that he could not provide sufficient time to implement CL. He used a teacher-directed approach to finish the lesson material of missed lessons because using CL took more time. Nawang, who was also a vice principal, indicated that the administrative jobs of a vice principal reduced her time in preparing lessons using CL. On the other hand, Nawang strongly believed that to implement CL successfully, a teacher had to prepare the lesson well so that the students could benefit from working in cooperative groups. This result highlights

the complex challenges faced by teachers who have other roles in the school organisation in implementing CL, particularly in the context of Indonesia.

The regional context. The regional context such as CL professional development, MGMP, and district education offices is nested in the microsystem, and is dynamically interconnected with the other two contexts: the classroom and the school. CL professional development conducted by national, regional, and private institutions and local universities played a significant role in introducing CL to the teachers. The CL professional development programmes ranged from 1-day workshops to 3-day workshops. The 3-day workshops, conducted by an aid donor, were reported as the most influential as they gave the teachers an opportunity to design a lesson plan using CL, execute the lesson plan in the classroom, observed and assisted by a mentor, and co-evaluate the practice with the mentor. However, the CL professional development was a one-off programme that left the teachers with no follow up. As a result, the findings reveal that most of the teachers seemed to have insufficient knowledge of CL, which may have impacted on both the teachers' willingness and ability to use CL. To increase the impact of CL professional development, Lumpe et al. (1998) suggested that CL professional development ought to be conducted on a long-term basis and it should incorporate feedback, self-reflection, and mentoring. Moreover, Ishler, Johnson, and Johnson (1998) indicated that follow-up training was more important than the training itself.

In addition to CL professional development conducted by educational institutions, the teachers in my study learned CL through MGMP at the school and regional level. Jati and Nawang, who were the Indonesian language teachers, met regularly with their group, at the regional level of MGMP, to learn CL. Both claimed that the collegial support from their group had given them support to implement CL. It was also evident that some teachers did not get support from their groups. These teachers reported that the group meetings were not

conducted regularly, and the groups discussed mostly common tasks such as curriculum development and the design of test items. Similarly, Chang at al. (2014) reported that MGMP had provided teachers with in-service training to continue their PD, but a large number of these groups had become inactive or even failed to provide support for teachers' career development. Chang et al. (2014) argued that the deficiency of the groups was due to the lack of support of the local education community, the availability of resource people, and funding.

Further, the findings of my study suggest that the support of the district education office is needed to ensure the success of the implementation of CL. Wadi, a vice principal who was responsible for dispositions and human resources, indicated that there had been a lack of support from the regional education office. He reported several challenges. First, there had not been any evaluation of the implementation of CL as a follow up of the CL professional development. He had expected that the teachers would be observed to see how they used CL in their real classrooms, and what challenges that they had in its implementation. Second, there had been weak coordination between the regional education office and the CL training provider regarding scheduling. The regional education office assigned teachers to work on other tasks at the same time as the potential CL professional development programmes, leaving teachers with no choice but to miss the CL professional development. The support of district education offices has been found to be positive to motivate teachers to use CL (Basset et al., 1999).

The mesosystem. The mesosystem involves the linkages and processes taking place between two or more individuals' microsystems (Bronfenbrenner, 1994). A mesosystem involved in this study is the connection among the classroom and the school, the regional microsystems. The connections among the microsystems are shown in Figure 12.

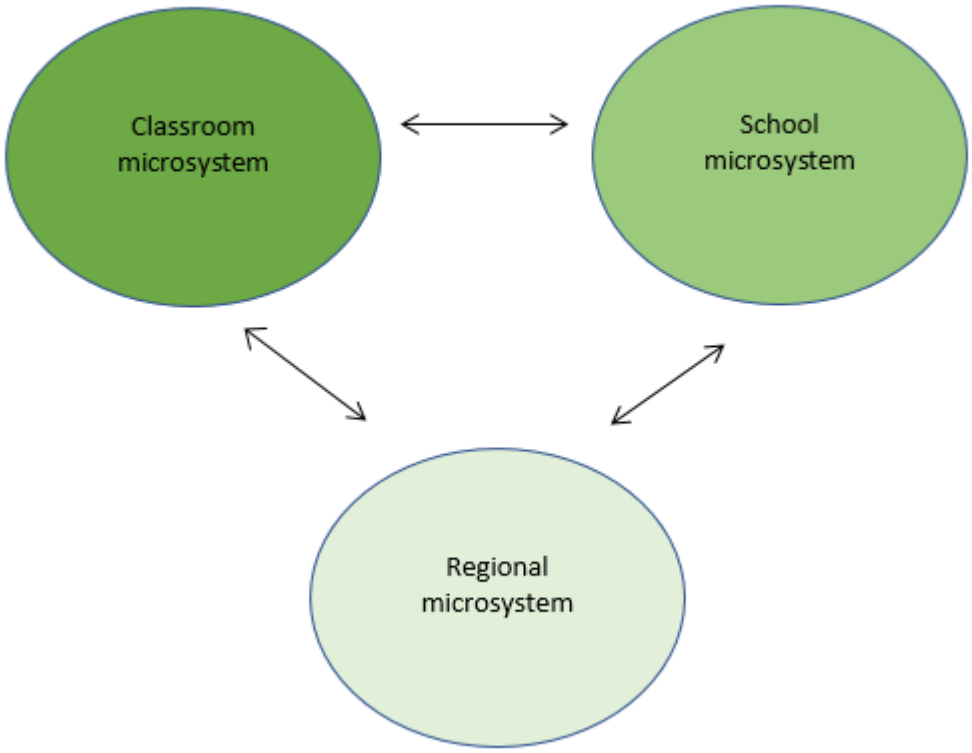

Figure 12. The connections among the microsystems in the mesosystem.

The activities, roles, and interpersonal relationships of the teachers in the classroom, school, and the teachers' wider community have a complex influence on teachers' beliefs and practice regarding CL. These influences are compounded across interrelations between the systems of microsystems including students, colleagues, teacher network, and even objects in the classroom and school. The connection with others or objects within and outside school was a crucial influence in developing teachers' beliefs about and practice of CL.

A strong link between schools' activities and students, promoting peer cooperation and coaching, was evident during fieldwork. School A and School B conducted gotong royong or mutual assistance regularly to clean the classroom and school environment. Groups of students, ready with their cleaning tools from home, were assigned cleaning jobs at the school. The sense of preserving and promoting local cultures of cooperation was also evident during the Phase 2 fieldwork when Krisentia showed me her work with her students

outside the classroom and class hours. She built a student community through the programmes she initiated such as Bank Mini, knitting group, and hydroponic garden. The programmes enabled the students in her school to share, assist, and gain experiences in working with others. These practices showed that natural, spontaneous informal CL was carried on voluntarily outside of the classroom.

The findings revealed that colleagues and the subject-teacher community played an important role in influencing teachers to use or not to use CL. The proactive support from colleagues in the school and the regional teacher community of Indonesian teachers in sharing CL encouraged Jati and Nawang to use CL. Jati and Nawang expressed how Indonesian language teacher MGMP at the regional level gave them sufficient CL sharing, which encouraged them use CL in their classrooms. However, this kind of support was not evident in Budi and Krisentia's MGMPs, about which both of them reported that their subject-teacher discussion forum did not share CL practices. Budi and Nawang might have had less knowledge of CL and motivation to use CL due to their context and support or subject community.

Weak and variable interaction between the school, CL training provider, and the regional education office in providing in-service CL training for the teachers inhibits teachers from attending potential professional development. In this study, some of the teachers reported that they cancelled their attendance at CL training because they had to carry out an obligatory assignment from the regional education office. For example, Budi, who was a vice principal and responsible for an important task in managing a national examination in his school, had to skip or leave his class several times during classroom observation because he was assigned by his school to attend a meeting at the local education office. The meeting should have been conducted after school hours so that he would not have had to leave his

class. The weak communication between school and the local education office directly affected Budi's students as they missed opportunity to learn and work in cooperative groups.

The exosystem. The exosystem is the more distal environment that does not involve the individual as an active participant, but the events and decision making affect the individual directly or indirectly (Bronfenbrenner, 1979). In this context of the study, the exosystem constitutes the national context that influences the teachers' beliefs about and practice of CL. Indonesia's education system is characterised by a top-down, bureaucratic model of compliance and control (Bjork, 2013). The system influences regional policies; regional policies, in turn, affect school policies and ultimately the teachers themselves. Bjork (2013) indicated that teachers had been controlled by the government through the MoEC, and that they seemed to be primarily responsible for meeting government requirements rather than to students and parents. The national policy, through nationwide mandated standardised testing, forced schools and teachers to adopt and comply with the national examination policy. Regional government (provincial and district) strongly encouraged schools to prepare for the national examinations because regional education, schools, teachers and students were judged primarily on the success of students in nationally mandated examinations.

Supported by multiple sources of data, the findings of my study reveal that the national examination overshadows teachers' beliefs about and practice of CL. The teachers claimed that the focus on national examination limited their use of CL despite believing in its value. During field study, for example, Krisentia rushed her students to finish some group tasks because the lesson time had been reduced due to mock national exams. In another instance, Budi had to postpone the classroom observation because the morning sessions were used by Year 9 students' mock national exams. These findings are in accordance with findings reported by Saukah and Cahyono (2015), Sutari (2017), and Agustina (2017). These previous studies reported that although the status of the national examination was lowered to

low-stakes testing, the teachers in their studies believed that the national examination was the most important test the students had to pass. The teachers in Sutari's (2017) study, for instance, did not teach Year 9 students English for communication, instead they gave their students a lot of exercises in the form of text-type questions and grammar rules similar to the national examination test format, which is multiple choice. Previous research in the US has found similar results (Au, 2008; Hannaway & Hamilton, 2008).

In addition to national examinations, my study reports that the recent Indonesian national curriculum (C 13; MoEC, 2012) both supported and constrained the participants' use of CL. The scientific approach, a teaching strategy using scientific steps in teaching subject matter, which requires the students to observe, gather information, ask questions, communicate the ideas, and associate the findings with the students' own situation, encouraged the teachers to use more cooperative group learning. The teachers used CL to promote a scientific approach. Nawang, for example, used Think-Pair-Share to implement a scientific approach. The integration of CL and a scientific approach also nurtured some of the basic competencies (active learning and social interaction) and core competencies (such as gotong royong) of the C 13 (see MoEC, 2013b).

The coverage of C 13 material and allocated time, however, constrained the teachers in using CL. The teachers indicated that the content coverage of the C 13 curriculum was so high that they could not complete the content required through CL alone. In addition, the teachers believed that the students would have a much richer understanding of the content with CL because they would be able to ask questions about it. However, the teachers would require much more time to finish a topic. Implementing CL within the existing curriculum was therefore a real problem. The current study confirmed the time challenge of implementing CL into the curriculum. This finding is consistent with literature (e.g., Dyson, 2002; Dyson et al. 2010; Dyson et al. 2016; Gillies & Boyle 2010). Likewise, the impact of

time and curriculum has been reported in studies in Southeast Asian countries such as Vietnam and Malaysia. Phuong-Mai, Terlouw, and Pilot (2009 and Thanh (2011) reported that the Vietnamese teachers spent little time implementing CL because they believed that they had just enough time to go through all the course material using teacher-directed approaches. They made their students memorise what was covered in the curricula to be able to pass the exams. In Malaysia, Zakaria and Ikhsan (2007) found that a perception of insufficient time to cover course materials was one of the biggest challenges experienced by teachers trying to implement CL.

In regards to the enabling and constraining effects of the C13 curriculum and the national examination, the findings of my study support very recent studies by Retnawati et al. (2018) and Agustina (2017). Taken together, the findings of this current study suggest that C 13 inhibits teachers from promoting student-centred learning because of high-stakes national examinations, time pressure, and the need to cover material.

The macrosystem. The macrosystem constitutes the outer ring of the individual's ecological environment and is an additional distal influence in shaping his/her development. It represents the societal blueprint that includes prevalent social and cultural norms, core educational values and practices, religious beliefs, etc. (Bronfenbrenner, 1979). The macrosystem in this study that influenced teachers' beliefs about and practice of CL included cultural values, and teaching and learning cultures.

The findings reveal that Indonesian cultural values of gotong royong and musyawarah were reported to have potential as a pushing force in the application of CL: a preference for working together; a strong social negative attitude towards social loafing; and a strong sense of groupness. The teachers identified CL as *pembelajaran* gotong royong (gotong royong teaching approach). They translated the word cooperative into gotong royong which means working together in Javanese. They believed that CL not only improved students'

involvement in their learning but also promoted Indonesian local cultures and values. It is argued that Indonesia is a collectivist society where social practices emphasise gotong royong, sharing the burden loads and cooperation to achieve a common goal and acceptance of mutual obligation. Gotong royong generates a readiness to cooperate with others on tasks. The Indonesian people also value musyawarah, gaining consensus among society members. Musyawarah grows out of a cooperative spirit that underlies the sense of community to develop general agreement.

Gotong royong and musyawarah create an accommodating and advantageous environment for the nurture and support of CL in and outside the classrooms. The field notes of the Phase 1 study showed that School A and B regularly conducted gotong royong to clean the school and classroom environment. Groups of students, ready with their cleaning tools from home, were assigned cleaning jobs at the school. The sense of preserving and promoting local cultures of cooperation was also evident during the Phase 2 fieldwork when Krisentia showed me her work with her students outside the classroom and class hours. These practices showed that the natural spontaneous informal CL was carried on voluntarily outside of the classroom.

Studies conducted in Indonesian schools reported a symbiotic relationship whereby CL promoted gotong royong which promoted CL. Demitra et al., (2012) developed a CL method that promoted the indigenous practice of gotong royong, handep (mutual assistance) cooperative learning. Demitra et al. reported that handep cooperative learning significantly established the five elements of CL—positive interdependence, individual accountability, promotive interaction, appropriate social skills, and group processing (see Dyson & Casey, 2012). Wahyudin et al.'s (2018) study of CL in social science classrooms in Indonesia, argued that gotong royong practice promoted cooperation behaviour that was needed to compete in global society. They proposed that CL was one of the pedagogical approaches to

promoting gotong royong characteristics of “care, tolerance and contribution” (p. 480). Their findings showed that students in an experiment group showed more care and tolerance to the other students in a control group and made greater contribution to group activities. In a further study conducted in Malaysia, a country which shares some cultural similarities with Indonesia (such as gotong royong; see Bowen, 1986), Arumugam et al. (2013) found that budi bahasa (language of character using refined language) and gotong royong held by Malay-descent students, influenced their cooperative behaviours in CL groups when compared to Chinese-descendent students’ cooperative behaviours. Arumugam et al. reported that Chinese students, whose cultural root was Confucianism, believed that teachers were authority figures who should be obeyed and respected, and preferred to work individually on their projects rather than work in groups. On the basis of these studies and my study, it is reasonable to expect that CL has the potential to be implemented successfully in Indonesia.

The findings show that the perception of teachers as the guru of knowledge or the centre of the class can be seen as a cultural barrier in the implementation of CL in Indonesia. The teachers believed that their role as the source of knowledge had not changed. They were uncertain if the students could construct difficult concepts let alone coach their peers. For difficult concepts, the teachers tended to use lecturing in combination with individual tests to check the students’ comprehension of the materials.

Interactions Among the Ecological Systems

Teachers’ beliefs and practices regarding CL are complex and contextually dependent processes that operate under the influence of the multiple settings in the ecological system. As discussed earlier, each setting in the microsystems is dynamically interconnected within the mesosystem influencing the development of teachers’ beliefs about CL and the practice of their beliefs. The findings described complex interactions at the mesosystem level that occur across microsystems of schools, colleagues, social networks such as MGMP, and professional

networks. It is argued that the more the teachers are aware of the importance of engaging productively across a variety of microsystems, the more they use CL. Bronfenbrenner (1979) stated the development of a person is strengthened through interactions with other people who are more expert. In the concept of social interaction as cognitive apprenticeship, Rogoff (1990) stated that children develop through participation in problem solving with more experienced members of a group. In the context of my study, the evidence shows that teachers learn CL from their colleagues who are more expert in CL.

The implementation of CL in Indonesia becomes even more complex as wider factors (in the exosystem layer), outside of the teachers' control, exert their influence; organisations such as the MoEC, national and regional educational institutions and agencies make decisions which positively and negatively impact on the teachers in the classroom. The exosystem level, the larger social system within which teachers do not interact directly, includes events that impact on the teachers' immediate settings—the microsystem (Cross & Hong, 2012). In the context of my study, for instance, it is crucial to consider the strong top-down policy in the Indonesian education system (see Bjork, 2005). Thus, the national education system influences regional and district policies. Regional policies, in turn, affect school policies and teachers. The national policy of state-wide mandated standardised testing and national examinations forces schools and teachers under their jurisdiction to adopt and comply with the policy. The national examination is conducted to monitor the quality of education across the country, with results ranked nationally. The provincial and district governments strongly encourage schools to perform well and prepare for the national examination. Compliance with the national examination system results in two main impacts on teachers: a focus on the national examination and an attack on the teachers' autonomy (Bjork, 2005). With the support of the aforementioned studies, the findings of my study suggest that teachers' beliefs and practice of CL are strongly controlled by the authorities.

The macrosystem constitutes the outer layer of the participants' ecological environment; while representing influences which are increasingly distal, they nonetheless remain pertinent in shaping the participants' beliefs and practice of CL. The macrosystem essentially represents the cultural norms and educational values and practices that are deeply entrenched throughout the remaining three systems (see Bronfenbrenner, 1979). The sociocultural norms of gotong royong and musyawarah, for example, generally believed in and held by the members of the society, are integrated into school activities (microsystem) and classroom instruction (microsystem) which are interconnected (mesosystem). This alignment of cultural norms and instructional practice supports the implementation of CL in the classroom as it advocates for students working in groups, sharing equal loads, and discussing ideas and reaching consensus on ideas outside the classroom.

In summary, there is an amalgam of differentiating ecological factors presented in the conceptual framework that directly or indirectly impact in different ways on the teachers' beliefs about, and practices of, CL. These include immediate settings in which the teachers interact, national policies, and sociocultural influences. It is apparent that individual teachers will negotiate and respond to these ecological influences in unique and different ways based on their beliefs, life histories, environment, and professional development opportunities. It is argued, however, that these ecological influences are subjective to the individual.

Contributions of the Study

This case study contributes to the study of teachers' beliefs and practice of CL, and to the study of CL. Bringing together the discussion of Phase 1, Phase 2, and the general discussion, I present the unique contributions of my study.

To teachers' beliefs. The current study contributes to the existing body of literature on teachers' beliefs about CL in multiple ways. First, in Indonesia, my study will contribute greatly to the understanding of teachers' beliefs and practice of CL, as little such research has

been conducted in this context. Second, this study adds to the extant literature on teacher beliefs about CL, as it reveals both a diverse range of influences on teacher beliefs and, importantly, the complexity of how these influences impact teacher practice. These findings go beyond previous studies on teachers' beliefs about CL, showing that teachers' beliefs about CL are even more complex and involve hitherto unexplored sociocultural and contextual factors (Abrami et al., 2004; Antil et al., 1998; Lumpe et al., 1998). The methodology of my study may have contributed to the differences in findings in comparison to previous studies. By employing multiple research methods such as interviews, classroom observations, post-observation interviews, and field notes, my study was able to capture not only the teachers' beliefs about CL but also its implementation in the Indonesian contexts. Abrami et al. (2004), Lumpe et al. (1998), and Antil et al. (1998) reported that they were unable to examine the teachers' actual practice of their beliefs about CL because they did not include classroom observation data. In further support of these authors' concerns, a number of studies (e.g., Argyris & Schön, 1974; Pajares, 1992; Sahin et al., 2002) demonstrate that the limitations of understanding beliefs through a single data source are well documented. Argyris and Schön (1974) suggested that to be able to know a participant's theory-in-use or theory that influences a participant's actions, researchers need to observe his/her behaviour. Pajares (1992) stated that data taken from a single data source cannot adequately reflect teachers' beliefs and practices. In the context of education, Sahin et al. (2002) asserted that teachers might not be able to say what they believed because they did not always critically analyse their own practice and experiences. Moreover, Hoffman and Kugle (1982) and Richardson (1996) stated that teachers might not be aware of their beliefs. This current study raises the possibility that teachers in previously published studies (Abrami et al., 2004; Antil et al., 1998; Lumpe et al., 1998) might also have complex beliefs; however, in the previous

studies their voices were not fully captured because they were recorded within a single method alone (see Fives & Gill, 2015).

Further, my study significantly contributes to the understanding of teachers' beliefs and the practice of their beliefs by offering a context-sensitive ecological model that can be adapted to other contexts. The holistic analysis adds to the existing research by identifying different contexts and influences nested in ecological systems affecting teachers' beliefs and practice. To my knowledge, an attempt to holistically analyse teachers' beliefs and practice of CL has not been undertaken before, thus my study offers original insight. Moreover, my study offers more comprehensive findings than Buehl and Beck's (2015) by including cultural contexts. The settings and influences include classroom, school and regional contexts (microsystems), national contexts (exosystem), and cultural contexts (macrosystem). The interactions among the ecosystems that are not discussed in Buehl and Beck's study are presented in my study. As shown in Figure 2, Buehl and Beck addressed possible relations between teachers' beliefs and practices, the congruence or incongruence of the beliefs and practice, as well as factors that support and hinder teachers implementing their beliefs in practice. The interactions are fundamental to understanding how each element in the ecosystem affects teachers' beliefs and practice (see Bronfenbrenner, 1979). The current study reveals, for example, that weak interactions between school, CL training provider and regional education offices cause teachers to miss some potential CL professional development, while evidence shows that CL professional development plays a significant role in shaping teachers' beliefs about CL.

To cooperative learning. This study adds to the corpus of CL research regarding the implementation of CL in an Eastern cultural context (e.g., Phuong-Mai et al., 2009; Sharan, 2010; Thanh, 2013). Davidson (1995) argued that CL has been developed and researched predominantly by Westerners in the context of Western values. The findings of this thesis

reveal that the majority of teachers in both phases of the study chose a friendship group, a group of close friends working together, over a heterogeneous group, a group of mixed-ability, -interests, -gender, and –ethnicity students, suggested by previous CL researcher developers, due to group cohesion and effectiveness, and practical reasons. It is evident from the interviews and classroom observation data analysis that friendship groups create more interaction among group members and increase task productivity. These findings confirm previous studies of CL in Vietnam that revealed friendship groups are favoured over heterogeneous groups in the Asian context because personal relationships and affection are important factors in determining the success of a group (Phuong-Mai et al., 2009; Thanh, 2013; Thanh & Gillies, 2010). The findings of my study, however, reveal more complex reasons why teachers subscribe to friendship groups than those of the aforementioned studies. Friendship groups save time because teachers do not need to provide extra time to compose groups based on students' ability, interests, and gender, and they do not have to rearrange big wooden tables and chairs. Although the teachers have limited time to cover the content materials, the constraint on time is higher when the teachers teach final-year students because they are preparing them for a series of exams to pass the national examination. Based on the aforementioned findings, this study suggests that a friendship group may fit the Indonesian context. It is also worth noting that it is possible that friendship groups consist of close peers with mixed abilities, mixed interests, and mixed genders.

My study has highlighted some discrepancies between CL theories and its practice. The cultures and contexts of this current study might be dissimilar from the ones in the West; however, this study reveals similar findings to the previous findings in the West. Similar to Antil et al. (1998), in Phase 1 of the study, the teachers in my study indicated that they were not familiar with CL elements and did not employ the elements in their classroom practices.

Prior research has suggested that it is almost impossible to implement CL effectively in the absence of the key elements (Gillies, 2016; D. W. Johnson & Johnson, 1992; Slavin, 1990).

It is important to recognise that Antil et al.'s (1998) findings, which relied on survey and interview data, might not reflect the teachers' actual practice of CL elements. Through classroom observation data analysis in Phase 2 of the study, I interpret that the teachers established at least four elements: positive interdependence through assigning roles; individual accountability through the division of tasks, peer, group, and teacher assessment; promotive interaction through seating arrangement and teachers' supervision; and social skills through peer mentoring, and direct supervision. These findings, thus, argue that the teachers in Antil et al. (1998) might have established CL elements despite most of the teachers claiming that they had not. As discussed earlier, some teachers cannot always analytically evaluate their own teaching (Sahin et al., 2002). They do not reflect deeply about their practice and may not be verbally explicit about their work. The degree to which teachers establish CL elements in the absence of the language to identify these elements requires further attention.

In regard to CL structures, my study reveals some important findings: some teachers were uncertain which structures they used due to the variety of CL structures; a few of the teachers had difficulties in distinguishing between CL and other student-centred approaches; and others modified CL structures to suit their own contexts. The CL structures workshopped through professional development might be a factor that influenced how teachers modified the structures into a manageable form that could fit their contexts. It is important to note that the teachers in my study did not receive professional development on CL structures directly from CL researcher developers. Thus, there are likely to be misconceptions about CL structures between the teachers in my study and the CL researcher developers. These findings are consistent with Antil et al.'s (1998) study in which some of

their participant teachers received CL professional development from CL researcher developers themselves. Antil et al. (1998) proposed that the modification of CL structures might be due to the misconception of CL between the CL researcher developer and CL structure dissemination. Antil et al. (1998) argued that the researcher developers, in disseminating CL structures, conveyed the benefits, but rarely informed the teachers about the conditions required to achieve these benefits. As a result, the teachers might assume that all CL structures were merely similar and tend to adopt the structures within their own context although the adjustment might yield undesirable outcomes. In addition, Sharan (2010) highlighted that the continued development of CL structures and their procedures cause uncertainty for the teachers who use them, thus creating a gap between the "promise of CL and its implementation" (p. 303).

My study indicates that teachers believe that students benefit from CL socially more than they do academically. This finding is consistent with the findings of Antil et al. (1998), Abrami et al. (2004), Dyson, Linehan, and Hastie (2010), and Dyson et al. (2016). It is evident that the teachers in this current study used lecturing for difficult concepts in their subjects because they did not believe in the students' ability to master content solely by learning from their peers and available resources. This finding is in contrast with what CL researcher developers have found through empirical studies: that CL promotes critical thinking and assists students to exchange information and create new knowledge that may exceed their teacher's knowledge (D. W. Johnson & Johnson, 1999). In the context of my study, the hierarchical perceptions of Indonesian teachers who believe knowledge should be transmitted from the teacher to the students might impede the teachers giving students the opportunity to explore their understanding of difficult concepts. Moreover, I believe that their decision to use direct instruction reflects the teachers' desire to have students pass exams rather than acquire deep learning. The Indonesian examination system is

predominantly knowledge based, thus there is less critical discussion. For instance, for Year 9 (final year in junior secondary school) students, the English test consists of 50 items, all in multiple-choice format, with 90 minutes time allocation. It is likely that CL is one approach which the teachers use, but it may not necessarily be the only approach; there is always time for teacher-directed learning.

This study significantly contributes to the understanding and implementation of CL in the Indonesian context because most studies of CL in Indonesia focus on the effectiveness of CL structures. The findings lead to several practical implications that will affect to educational policy alignment, communication among schools, CL training providers, and education offices, student orientation programmes for CL groups, and teacher preservice and in-service CL training.

Practical Implications of the Study

Apart from the contributions to the wider fields, the findings of this study lead to practical implications for education in Indonesia particularly for policy makers and curriculum developers, students, and teachers.

Policy makers and curriculum developers. The evidence of the two phases indicates that there has been misalignment between assessment policy and curriculum. The issue of the national examination and the way in which it distorts both the curriculum and teaching and learning processes has been at the centre of critical public discourse (Cannon, 2015; Kosasih, 2015). There is a tension between student-centred learning approaches such as CL, as a progressive form of pedagogy, and a national examination system that measures the success of children's learning and, by proxy, the quality of the teaching.

Introducing a new pedagogical approach to teaching and learning such as CL requires a shift where student participation in the learning is emphasised. Participation in the process of learning cannot be measured and judged appropriately by the multiple-choice type of

examination that is annually administered. Teachers are concerned that they will be judged not by how much students' participation in their learning increases, but by how well the students perform in the examination. The findings of the current study indicate that, in the Indonesian context, the alignment between assessment policies and teaching and learning processes needs to change. Until this issue is addressed, attempts to promote and implement student-centred learning will not result in significant change.

Misalignment within the curriculum is evident in this study. The findings of this study indicate that the material coverage in C 13 leaves the teachers with limited time to practise the scientific approach, which can be integrated with CL. The scientific approach requires the students to 1) conduct some observations on the topic, 2) create questions based on their observations, 3) gather information, 4) analyse the information to answer the questions, and 5) present the findings. All participant teachers in this study suggested that they would need more time to cover the content topic if these five steps are to be conducted in cooperative groups.

With the aforementioned misalignments between the assessment policy and curriculum, and between the curriculum and its practice, it is apparent that there has been a gap between the policy makers and curriculum developers, and teachers. There should be a genuine collaboration and cooperation between the policy makers and the teachers instead of ideas and policies being imposed on teachers by a top-down model (see Bjork, 2005). As well, policy makers and curriculum developers should work along with teachers while constructing new curriculum as teachers are the ones who will implement the curriculum.

Students: Orientation for cooperative group work. It is evident in my study that the friendship group is popular among the teachers. However, friendship groups have some limitations for students. First, they isolate some students who are not closely connected with a friendship group. For instance, Krisentia reported that when she asked her students to

choose their own group, some students, whom she called “unwanted” students, would be left out. This condition is against the idea of CL as suggested by D. W. Johnson and Johnson (2014) and Cohen and Lotan (2014). D. W. Johnson and Johnson (2014) stated that CL should be able to help students who are “isolated and alienated from their peers” (p. 846) to be supported in a cooperative group. Second, it prevents ideas moving between different groups. In other words, a group of boys, getting along and thinking in the same way, may not challenge each other’s thinking (see also Cohen & Lotan, 2014). Further, the social outcomes might be less apparent if the students work with others whom they already know, as there is no new relationship that has been built. A further limitation is that most of the observed teachers did not provide students with CL orientation such as introducing the cooperative norms, challenging each other’s thinking, and evaluating peers’ work. Gillies and Ashman (1996) documented that students who were trained to work in small groups demonstrated more involvement with the group, higher motivation, greater interdependence, and higher involvement in the learning task than untrained students did. The importance of training students to work cooperatively in groups may be even more important in the context of this current study because the majority of Indonesian students have been characterised as passive students and lacking autonomy (Gillies, 2016; Gillies & Ashman, 1996).

Teachers: In-service and preservice training. This study reveals a considerable need for an integrated system of CL training programme at both in-service and preservice levels in Indonesia. Teachers play a significant role in the success or failure of the implementation of CL (Gillies, 2016; D. W. Johnson & Johnson, 2008). The findings indicate that the teachers in this study lacked conceptual understanding of CL, which contributed to their difficulty in the implementation of CL. Their misconception of CL was caused by several factors. First, CL in-service training was typically delivered through short professional development programmes and was not followed up. Therefore, the teachers

understood CL as a theoretical model only. Second, the teachers integrated their knowledge of CL into other similar student-centred ideas such as problem-based learning and conceptual teaching and learning during their professional development. While CL requires teachers to incorporate the five principle elements to work effectively, other student-centred approaches do not have the same emphasis. Third, partial knowledge of CL in conjunction with a prior understanding of student-centred teaching has led to CL that is more consistent with group work and social construction of knowledge rather than CL. Thus, providing teachers with continuous CL-in-service training involving teaching using CL, reflections on lessons and close mentoring, a greater focus on the establishment of CL elements is likely to occur, yielding a more successful implementation of CL.

Ongoing CL professional development is important because teachers' beliefs develop over time (Buehl & Beck, 2015). For example, Budi and Jati's beliefs have undergone changes to be more student centred over the years of teaching and a series of CL training sessions. This belief change should be fostered in an integrated in-service system that will best support teachers in the practice of their beliefs about CL and make them more resistant to the external pressures such as classroom, school, curriculum, and political contexts. The in-service system should involve interactions among school, regional education offices and CL training providers and taking an active role of teacher meeting groups. The training should be followed by an ongoing mentoring system and follow-up reflections and assessment.

Previous studies reported that beliefs change (Buehl & Beck, 2015; Fives & Buehl, 2012), thus, CL professional development should begin during preservice training. Within teacher education programmes, faculty could design CL programmes which cover: 1) the theories underlying CL including the benefits of CL for social and academic outcomes (D. W. Johnson & Johnson, 2008), 2) the elements of CL and the way to incorporate them into CL

structures, and 3) CL preparation covering preparing students for effective cooperative group work, group roles and responsibilities; designing tasks; and planning for individual and peer assessment (Cohen & Lotan, 2014). Further support is required for preservice teachers as they enter and continue to develop within the profession including ongoing CL professional development that offers knowledge for the implementation of CL, and continued support in the form of mentoring and coaching.

Limitations and Directions for Future Research

This current interpretative case study presents some new findings pertaining to teachers' beliefs and practice about CL. The use of a multiple case study approach and ecological analysis offers new and comprehensive ways of understanding teachers' beliefs about CL, the congruence and incongruence of their beliefs and practice, and the implementation of CL. Nevertheless, there are possible limitations that need to be considered particularly with reference to future research.

The ecological framework provides a model for examining the breadth of factors that affect teachers' beliefs about and practice of CL, such as students, school, CL in-service trainers, and policy makers. However, my study used teachers as participants. It did not study other people or objects interacting with the teacher participants such as professional development trainers, school principals, and students. Further study should include the wider community influencing teachers' beliefs and practice. The results of the study show that the teachers' practice of gotong royong and musyawarah in their community has influenced them in using CL.

It is clear from this study and previous research that the success of CL implementation requires the establishment of CL elements. Measuring the degree to which CL elements were incorporated was beyond the scope of this study. To do so, I needed to evaluate how the students interacted with other group members and established the elements. For example,

knowing the interaction among group members would further help researchers analyse the degree of positive interdependence, individual accountability, positive interactions, and the interpersonal and small group skills, and, through peer-assessment observations, researchers could assess how the group functioned. Alternatively, further researchers could use cooperative learning validation tool, along with validation tool field notes developed by Casey, Goodyear, and Dyson (2015) to examine the degree of CL elements.

Conclusion

I embarked on in order to explore and understand teachers' beliefs about and practice of CL. Through multiple methods and the study of the four cases, I have been able to uncover not only the complexity of the teachers' beliefs about CL but also the congruence between their beliefs and the practice and the implementation of CL in the Indonesian context. In addition, the ecological systems theory (the framework for the study), has enabled me to explain the complex factors nested in the Indonesian ecological systems that influence teachers' enactment of their beliefs. Importantly, the ecological model has also allowed me to explore the interactions among the systems, the understanding of which can provide Indonesia with possibilities for a more holistic approach to education.

The findings of this study demonstrate that when an instructional model such as CL is implemented in a culture different from the one in which it was constructed, unique societal and cultural norms may support or clash with CL. The evidence shows that the teachers subscribed to CL because CL promotes and embraces, within its practice, the values of gotong royong and musyawarah. As well, teachers used CL for its social and emotional benefits for their students and social and emotional learning. However, the Indonesian prevailing role of a guru, *digugu lan ditiru*, as one to be obeyed and to be followed, affected teachers' practice of their beliefs about CL. The perception of teachers as the centre of knowledge was evident in that teachers used the direct method to teach difficult concepts

rather than giving students time to conduct in-depth learning of the concepts. For that reasons it appears that Indonesian teachers subscribed to CL for more social benefits than academic ones. Evidence suggests that CL promotes higher order thinking and greater transfer of learning (D. W. Johnson & Johnson, 2009). The current findings, however, indicate that more information about the cultural factors that influence teachers' use of CL would help CL professional development trainers to develop a programme to better assist teachers to explore CL to increase students' academic competence.

The findings of the research provide a significant contribution to the study of teachers' beliefs and practice in regard to CL by offering an ecological model that aids in understanding teachers' beliefs and practice in the current context, but which could be adopted in other contexts. The ecological model of teachers' beliefs and practice presented by Buehl and Beck (2015) was expanded by the inclusion of cultural factors that influenced the teachers to practice their beliefs, based on their strong Indonesian culture. In addition, the interactions among the systems, which are fundamental in understanding how each factor in the ecosystems affects teachers' beliefs and practice, were examined. As well, the analysis of the interactions among the systems revealed practical implications for the development of holistic education in Indonesia, with the integration of cultural values of gotong royong and musyawarah. The ecological model is context-sensitive to teachers in the context of this current study, and applications in contexts with similar cultural, organisational, educational, and instructional features has the potential to reveal similar findings. More importantly, the conceptual framework encourages researchers to continue searching for a suitable model that fits a specific context rather than following a particular existing model.

To conclude, through this PhD journey I have found answers not only to this study's research questions but also to my own lived experiences where I questioned why my teachers did not involve me in my learning; and what factors prevented them from using student-

centred approaches. Through this journey, my conviction about the value of CL has been reinforced. I believe that CL has potential to be developed further and used more widely in Indonesia. CL offers teachers strategies to engage, and take ownership in their learning. Further, CL encourages students to embrace and practise Indonesian culture in the classroom thus improving their social interaction and interpersonal skills. I believe in Indonesian teachers' endeavours to implement CL. I have witnessed the excitement demonstrated by the teachers using CL. Moreover, I have seen their enthusiasm as begin to understand CL and implement it in their own unique contexts. The implementation of CL in Indonesia is complex and difficult, as CL is a new instructional strategy that, despite being consistent with some of the values of Indonesian culture, it is contrary to traditional teaching styles in Indonesian schools. The examination of CL using the ecological model has been highly useful in helping to demonstrate the complexity of the implementation of CL in the Indonesian context.

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Appendix A: Participant Information Sheet (Teacher)

EDUCATION AND SOCIAL WORK

SCHOOL OF CURRICULUM AND PEDAGOGY
Te kura o te Marautanga me te Ako

Epsom Campus
Gate 3, 74 Epsom Ave
Auckland, New Zealand
T +64 9 623 8899
W www.education.auckland.ac.nz
The University of Auckland
Private Bag 92019
Symonds Street
Auckland 1135
New Zealand

PARTICIPANT INFORMATION SHEET
(Interview - Teacher)

Project title: Teachers' Beliefs, Knowledge, and Practice of Cooperative Learning: A Multi Case Study of Indonesian Junior Secondary School Teachers

Name of the Researcher:
- Sari Karmina, Doctoral Student, Field Researcher

Name of the Supervisors:
- Associate Professor Ben Dyson, Main Supervisor & Principal Investigator
- Dr Penelope Watson, Lecturer, Second Supervisor & Co-Investigator

Invitation and Project Description

You are invited to participate in a research project conducted by Sari Karmina, a doctoral student from the Faculty of Education and Social Work, the University of Auckland. My supervisors are Dr Ben Dyson and Dr Penelope Watson. Currently, I am working on my doctoral thesis on the teachers' beliefs and knowledge, and practice of their beliefs in the classrooms about Cooperative Learning. The purpose of my study is to explore and interpret teachers' beliefs and knowledge, and practice about Cooperative Learning in Indonesia junior secondary school teachers.

Project Procedures

If you are interested in participating this research, we seek your permission to conduct an interview. The interviews will be carried out at a time or place of your choosing. The

interviews may take approximately 1 hour. The interviews will draw on your beliefs and knowledge and practice about Cooperative Learning in your junior secondary school. The interviews will be audio-recorded.

Right to Withdraw from Participation

Your participation is voluntary. As a participant, you have the right to withdraw at any time until 1 December 2016. You can decline to answer any questions that you feel uncomfortable answering and may ask for the recording device to be switched off at any time during the interview. Your Principal has agreed that your participation or non-participation in this study, and possible withdrawal, will in no way affect your employment.

Data Storage/Retention/Destruction/Future Use

The interview data will be analysed by the researcher and a hard copy of the transcriptions and analysis will be made available to you. You will have the opportunity to read and revise your interview transcripts within two weeks of each activity. The data collected from the whole process will be electronically saved in password-protected files stored in the server of the Universty of Auckland for the period of 6 years. The data will also be stored in a locked cabinet in Associate Professor Ben Dyson's office at the University of Auckland for 6 years. At the end of this time all paper data will be shredded and audio files deleted. If you would like to have a copy of the final research findings, please indicate this on the Consent Form, and I will send you the research report by email on the completion of the study.

Confidentiality

The preservation of confidentiality is paramount. Names of individuals and schools will be changed and not used in analysis or publication of the results. The teacher's responses may be presented at a conference or published in a professional journal, but all names will have a pseudonym in order to ensure confidentiality. The interviews will be transcribed by the researcher, translated by a translator. The translator will be required to sign and abide by a confidentiality agreement.

If you are willing to become part of this research project and you are satisfied that all your queries have been answered, please fill out the attached consent form and return to me. This research is funded by the University of Auckland Faculty Development Research Fund. A small Koha will be given to you to provide money for your bus fare or petrol.

Yours faithfully,

Sari Karmina
Doctoral Student,
School of Curriculum and Pedagogy
Faculty of Education and Social Work,
University of Auckland – New Zealand
Email: skar080@aucklanduni.ac.nz

New Zealand Address: The University of Auckland, Faculty of Education; Office: N 611 (Doctoral Space) Epsom Campus; Phone Number: +64 9 623 8899 Ext. 48255

Indonesia Address (Private Residence): Felia Regency, No. 16, Rt. 06/ Rw. 01, Tambak Aji, Ngaliyan, Semarang, Indonesia. Phone Number: +62 857 9999 0388

If you have any queries, please contact:
Associate Professor Ben Dyson, Curriculum and Pedagogy, +64 9 623 8899, ext. 48337, email: b.dyson@auckland.ac.nz
Dr Penelope Watson, Learning Development and Professional Practice, +64 9 373 7999, ext. 46424, email: p.watson@auckland.ac.nz
or Helen Hedges, Head of School of Curriculum and Pedagogy, +64 9 373 7999, ext. 48606, email: h.hedges@auckland.ac.nz

If you have concerns of an ethical nature, you may contact the Chair of the University of Auckland Human Participants Ethics Committee, The University of Auckland, Private Bag 92019 Auckland Mail Centre, Auckland, 1142, New Zealand or phone 373-7599 ext. 83711 Email: ro-ethics@auckland.ac.nz
Approved by the University of Auckland Human Participants Ethics Committee on 04-Oct-2016 for three years, Reference Number 017950.

Appendix B: Consent Form (Teacher)

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Te kura o te Marautanga me te
Ako

Epsom Campus
Gate 3, 74 Epsom Ave
Auckland, New Zealand
T +64 9 623 8899
W www.education.auckland.ac.nz
The University of Auckland
Private Bag 92019
Symonds Street
Auckland 1135
New Zealand

CONSENT FORM – TEACHER
(Interview)

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project Title: Teachers' Beliefs, Knowledge, and Practice of Cooperative Learning: A Multi Case Study of Indonesian Junior Secondary School Teachers

Name of the Researchers:	• Sari Karmina, Doctoral Student, Field Researcher • Associate Professor Ben Dyson, Main Supervisor & Principal Investigator • Dr Penelope Watson, Lecturer, Second Supervisor & Co-Investigator
Contact Email address of the Researchers:	• Sari Karmina: skar080@aucklanduni.ac.nz • Associate Professor Ben Dyson: b.dyson@auckland.ac.nz • Dr Penelope Watson: p.watson@auckland.ac.nz

I confirm that:

- I have read and understood the Participant Information Sheet.
- I have had the opportunity to ask questions and have them answered.
- I agree to my taking part in research on the teachers' beliefs, knowledge, and practice about Cooperative Learning
- I have been given my assurance that participation or non-participation in this study will in no way affect my teachers' employment.

- I understand that participation is voluntary and that I am free to withdraw participation at any time up to 1 December 2016 without giving reason.
- I understand that the time commitment for the interview will be approximately 1 hour.
- I understand that I will have opportunities to review and edit the transcriptions and translations within two weeks after the transcriptions are transcribed and translated.
- I understand that a third party will be used to translate the transcription and that this person will be required to sign a confidentiality form.
- I understand that no other parties except the researcher and her supervisors will have access to the recorded data.
- I understand that the consent form and data, including recordings, will be kept in a locked cabinet on University of Auckland premises for 6 years, after which they will be wiped and destroyed.
- I understand that the data gathered may be used to contribute to the academic literature but all names will have a pseudonym in order to ensure confidentiality.
- I understand any information gathered might be used in the research that participants and non-participants are welcome to read when it is completed. Findings may also be used for publication and conference presentations.
- I understand that my confidentiality will be protected and if the information I provide is reported or published, a pseudo-name will be used and any possibility to trace me as the source of the information will be avoided in order that I will not be identified.
- I wish / do not wish (delete one) to receive a summary of findings. The summary of findings can be emailed to me at this email address:

  _____.

I agree to take part in this research.

Name: _____

Signature: _____ Date: _____

Approved by the University of Auckland Human Participants Ethics Committee on 04-Oct-2016 for three years, Reference Number 017950.

Appendix C: Participant Information Sheet (Student)

EDUCATION AND SOCIAL WORK

SCHOOL OF CURRICULUM AND PEDAGOGY
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Epsom Campus
Gate 3, 74 Epsom Ave
Auckland, New Zealand
T +64 9 623 8899
W www.education.auckland.ac.nz
The University of Auckland
Private Bag 92019
Symonds Street
Auckland 1135
New Zealand

PARTICIPANT INFORMATION SHEET
(Classroom Observation - Student)

Project title: Teachers' Beliefs, Knowledge, and Practice of Cooperative Learning: A Multi Case Study of Indonesian Junior Secondary School Teachers

Name of the Researchers:

- Sari Karmina, Doctoral Student, Field Researcher
- Associate Professor Ben Dyson, Main Supervisor & Principal Investigator
- Dr Penelope Watson, Lecturer, Second Supervisor & Co-Investigator

Dear Students,

My name is Sari Karmina; I am a doctoral student from the Faculty of Education and Social Work, the University of Auckland. My supervisors are Associate Professor Ben Dyson and Dr Penelope Watson. Currently, I am working on my doctoral thesis on the teachers' beliefs and knowledge, and practice of their beliefs of Cooperative Learning.

In order to conduct the research, I am writing to notify you that I will conduct a series of classroom observations in your classroom for approximately 7 sessions. During these times, I will be observing the whole learning interactions that you and your friends may involve in. The purpose for the observation is to see the cooperative group activities when you are doing the tasks in the classroom. With this background, I am writing to notify you, and requesting your consent for participation too.

To do the observation, I will be present in the classroom to listen, watch, and video record the learning interactions. I will not interupt your learning. During the observation time, I will use pen and paper, and a video recorder. The video recorder will be placed in the back of the class so that it will not disturb your learning. This activity will take the whole-class session, approximately 45 minutes. I confirm that you will not experience any harm from taking part. Students who do not consent to the classroom observation will be given a make-up class that has equivalent educational value so their academic performance is not disadvantaged. Alternatively, teachers may choose another class in which the observation can be conducted.

The data gathered will be used for my thesis and for other publications (articles, paper, and presentations). Your parent/guardian is offered to have a copy of the result of the study when the study is completed. A third party will be employed to translate the video tape transcriptions and that this person will be required to sign a confidentiality form.

For the purpose of confidentiality of your information, your name will be changed and not used in analysis or publication of the results. The data collected from the whole process will be electronically saved in password-protected files stored in the server of the University of Auckland for the period of six years. The data will also be stored in a locked cabinet in Associate Professor Ben Dyson's office at the University of Auckland for six years. At the end of this time all paper data will be shredded and audio files deleted.

If you agree to take part in my research, I invite you to sign an assent form. If you do not agree, you can also decline to give consent. Your participation in my research is totally voluntary. If you are a part of the study or not a part of the study, this will not affect your education grades. I assure you that your principal and your teacher have signed a consent form agreeing that whether or not you are willing to participate in this project will in no way affect your schooling. It is very important that you are allowed to withdraw your participation from my research without having to say the reason until 1 December 2016. In case you feel discomfort due to my research activity, you can always discuss it with me or feel free to approach your class teacher.

Thank you very much for your time and help in making this study possible. If you have any questions, kindly contact me via contact details provided below.

Yours faithfully,

Sari Karmina
Doctoral Student,
School of Curriculum and Pedagogy
Faculty of Education and Social Work,
University of Auckland – New Zealand
Email: skar080@aucklanduni.ac.nz

New Zealand Address: The University of Auckland, Faculty of Education; Office: N 611 (Doctoral Space) Epsom Campus; Phone Number: +64 9 623 8899 Ext. 48255
Indonesia Address (Private Residence): Felia Regency, No. 16, Rt. 06/ Rw. 01, Tambak Aji, Ngaliyan, Semarang, Indonesia. Phone Number: +62 857 9999 0388

If you have any queries, please contact:

Associate Professor Ben Dyson, Curriculum and Pedagogy, +64 9 623 8899, ext. 48337, email: b.dyson@auckland.ac.nz
Dr Penelope Watson, Learning Development and Professional Practice, +64 9 373 7999, ext. 46424, email: p.watson@auckland.ac.nz
or Helen Hedges, Head of School of Curriculum and Pedagogy, +64 9 373 7999, ext. 48606, email: h.hedges@auckland.ac.nz

If you have concerns of an ethical nature, you may contact the Chair of the University of Auckland Human Participants Ethics Committee, The University of Auckland, Private Bag 92019 Auckland Mail Centre, Auckland, 1142, New Zealand or phone 373-7599 ext. 83711 Email: ro-ethics@auckland.ac.nz

Approved by the University of Auckland Human Participants Ethics Committee on 04-Oct-2016 for three years, Reference Number 017950.

Appendix D: Assent Form (Student)

SCHOOL OF CURRICULUM AND PEDAGOGY
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Epsom Campus
Gate 3, 74 Epsom Ave
Auckland, New Zealand
T +64 9 623 8899
W www.education.auckland.ac.nz
The University of Auckland
Private Bag 92019
Symonds Street
Auckland 1135
New Zealand

ASSENT FORM – STUDENT
(Classroom Observation)

THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project Title: Teachers' Beliefs, Knowledge, and Practice of Cooperative Learning: A Multi Case Study of Indonesian Junior Secondary School Teachers

Name of the Researchers:

- Sari Karmina, Doctoral Student, Field Researcher
- Associate Professor Ben Dyson, Main Supervisor & Principal Investigator
- Dr Penelope Watson, Lecturer, Second Supervisor & Co-Investigator

Contact Email address of the Researchers:

- Sari Karmina: skar080@aucklanduni.ac.nz
- Associate Professor Ben Dyson: b.dyson@auckland.ac.nz
- Dr Penelope Watson: p.watson@auckland.ac.nz

I have read the Participation Information Sheet, and I have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- My participation is voluntary.
- I understand that there will be classroom observations in my classroom for seven sessions.
- I have been given assurance that my participation or non-participation in this study will in no way affect my schooling.

- I understand that the principal and my teacher have signed a consent form agreeing that whether or not I am willing to participate in this project will in no way affect my schooling.
- I understand that participation is voluntary and that I can withdraw from the project up until 1 December 2016.
- I understand that a third party will be used to translate the audio tapes and that this person will be required to sign a confidentiality form.
- I consent to be videotaped as part of the normal learning and teaching.
- I understand that my activities will be analysed and used for Sari Karmina's PhD thesis or her other publication
- I understand that the data will be kept for 6 years.

Name: _____

Signature: _____ Date: _____

Approved by the University of Auckland Human Participants Ethics Committee on 04-Oct-2016 for three years, Reference Number 017950.

Appendix E: Interview Questions

1. Tell me about you.

- How long have you been teaching?

- Which schools have you worked with?

2. Tell me about your teaching experiences.

- Have there been any changes?

- Were the changes positive or negative?

3. Do you use cooperative learning (CL)?

4. Have you joined CL professional development (training/workshop) before? If yes, tell me about the training/workshop that you have attended?

- Who conducted the professional development?

- What did you gain from it?

- Were there any follow up after the training?

5. What do you think about it (CL)?

- What do you specifically like about CL?

6. What do you know about CL?

7. How do you define CL?

8. Could you tell me about the elements of CL?

9. What CL structures do you use?

10. How do you use the structure?

11. Did you modify the structure?

12. How do you design CL tasks?

13. Can you give me example of the task?

14. How do you prepare your students about CL groups?

- How do your students behave in groups?

- Did you teach them how to behave in groups?

15. How do you form a group?

- Do you consider mixed gender and ability group?

16. How do you assess the students in groups?

- What kinds of rewards did you give to your students?

17. What are the challenges in applying CL in your class?

18. Some people say that our values such as gotong royong and musyawarah are similar to CL elements. What do you think about that?

19. If you think that the values are similar to CL, can you give me some examples of gotong royong, musyawarah practice in your class?

20. Do you practice gotong royong and musyawarah in your school or community?

21. How do you practice gotong royong and musyawarah in your community?

- Can you give me some examples of the practice?

Appendix F: Transcriber Confidentiality Agreement

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Te kura o te Marautanga me te Ako

Epsom Campus
Gate 3, 74 Epsom Ave
Auckland, New Zealand
T +64 9 623 8899
W www.education.auckland.ac.nz
The University of Auckland
Private Bag 92019
Symonds Street
Auckland 1135
New Zealand

TRANSCRIBER CONFIDENTIALITY AGREEMENT

Project title: Teachers' Beliefs, Knowledge, and Practice of Cooperative Learning: A Multi Case Study of Indonesian Junior Secondary School Teachers

Name of the Researchers:

- Sari Karmina, Doctoral Student, Field Researcher
- Associate Professor, Ben Dyson, Main Supervisor & Principal Investigator
- Dr Penelope Watson, Lecturer, Second Supervisor & Co-Investigator

Transcriber:
I agree to transcribe the audiotapes for the above research project. I understand that the information contained within them is confidential and must not be disclosed to, or discussed with, anyone other than the researchers.

Name: _____ (please print clearly)

Signature: _____ Date: _____

Approved by the University of Auckland Human Participants Ethics Committee on 04-Oct-2016 for three years, Reference Number 017950.

Appendix G: Translator Confidentiality Agreement

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Epsom Campus
Gate 3, 74 Epsom Ave
Auckland, New Zealand
T +64 9 623 8899
W www.education.auckland.ac.nz
The University of Auckland
Private Bag 92019
Symonds Street
Auckland 1135
New Zealand

TRANSLATOR CONFIDENTIALITY AGREEMENT

Project title: Teachers' Beliefs, Knowledge, and Practice of Cooperative Learning: A Multi Case Study of Indonesian Junior Secondary School Teachers

Name of the Researchers:

- Sari Karmina, Doctoral Student, Field Researcher
- Associate Professor Ben Dyson, Main Supervisor & Principal Investigator
- Dr Penelope Watson, Lecturer, Second Supervisor & Co-Investigator

Translator:

I agree to translate the transcriptions for the above research project from Indonesian language to English. I understand that the information contained within them is confidential and must not be disclosed to, or discussed with, anyone other than the researchers.

Name: _____ (please print clearly)

Signature: _____ Date: _____

Approved by the University of Auckland Human Participants Ethics Committee on 04-Oct-2016 for three years, Reference Number 017950.

Appendix H: Jati's Larger Category and Theme Development

List of Tables

Table H1

The Development of Theme One: Personal Concept and Knowledge of Cooperative Learning

Data	Category	Larger category	Theme
Interviews	Defining CL Defining CL elements Giving examples of CL methods Describing Jigsaw methods Forgetting the names of the methods Defining an ideal group Giving examples of CL lesson	1. Conception and knowledge of CL	
Classroom observations	Informing students about CL lesson Defining CL Grouping students Giving roles for group members Assigning groups for discussions Homogenous groups		1. Personal concept and knowledge of CL
Post-observation interviews	Unable to name CL methods Ideal number of a group Explaining Jigsaw method Defining CL characteristics	1. Knowledge of CL	
Field notes	Dividing roles for positive interdependence Social interaction Positive interaction Homogenous groups Lack of individual accountability		

Table H2

The Development of Theme Two: Authority and Control of The Class

Data	Category	Larger category	Theme
Interviews	Personal experience as a student Personal experience in teaching direct approach Applying direct method for difficult topics Worrying about students' comprehension on the difficult material Having reservations about low-achieving students	2. Influence of direct approach	
Classroom observations	Pointing a group to present Restating groups' opinion Controlling discussions Pointing group members to respond		2. Authority and control of the class
Post-observation interviews	Interfering groups' discussion Having reservations about low-achieving students	2. Control of the class	
Field notes	Teachers' roles in the past Telling experience as a student Dominating students' discussion Facilitating discussion		

Table H3

The Development of Theme Three: Students' Behaviour in Groups and Grouping Challenges

Data	Category	Larger category	Theme
Interviews	Students' positive behaviour in groups Students' undesirable behaviour in groups Group's conflict Solving group's conflict Students' preferences in group composition Difficulties in forming ideal groups Dissolving problems of group composition Students' protests on group composition Absence of group behaviour orientation	3. Students' behaviour in groups and group composition difficulties	3. Students' behaviour in groups and grouping challenges
Classroom observations	Group composition Number of groups Uncooperative students Students' choice of group composition Problems of group composition Students' behaviour in group activities		
Post-observation interviews	Group composition problems Uncooperative students Ideal number of groups Undesirable behaviour of students in groups Difficulties in grouping students	3. Students' behaviour in groups and group composition problems	

Field notes	Dissolving problem of group composition Change of group members Uncooperative students Group's undesirable behaviour Same gender preferences		

Table H4

The Development of Theme Four: Institutional Support and Challenges

Data	Category	Larger category	Theme
Interviews	The curriculum 2013 support of active learning Working in group habit Lack of school facility Lack of CL preparation	4. Institutional support and challenges	
Classroom observations	Fast grouping and dividing roles Discussion habits Giving feedback to group presentation Number of group changes Lack of classroom facilities Classroom conditions	4. The presence of group work and institutional challenges	4. Institutional support and challenges
Post-observation interviews	Support of the curriculum 2013 Practices of giving feedback to other groups Encouraging groups to give feedback		

Data	Category	Larger category	Theme
Field notes	Unprepared lesson Indecisive group numbers Giving feedback among groups Fast grouping Inadequate classroom facilities		

Table H5

Four Remaining Larger Categories of the Interviews

Data	Category	Larger category	Theme
Interviews	Individual assessment Group assessment Curriculum 2013 assessment criteria	1. Assessment	-
	Giving “star” to active students Using grades to active students	2. Rewards	-
	Workshop experiences CL mentors	3. CL professional development	-
	Doing discussions Making presentations Making posters Doing reflection in the end of group work	4. CL tasks	-

Table H6

Three Remaining Larger Categories for Classroom Observations, Post-Classroom Observation Interviews, and Field Notes

Data	Category	Larger category	Theme
Classroom observations	Group monitoring Checking group progress		
Post-observation interviews	-	1. Group monitoring	-
Field notes	Group monitoring		
Classroom observations	Reviews of previous lesson Objectives of the lessons Eliciting		
Post-observation interviews	-	2. Lesson opening	-
Field notes	Similar procedures of opening the lesson		
Classroom observations	Groups' ignorance to the presenting groups		
Post-observation interviews	-	3. Lack of attention to the presenting groups	-
Field notes	Lack of attention to the presenting groups		

Appendix I: Budi's Larger Category and Theme Development

List of Tables

Table I1

The Development of Theme One: Personal and Pedagogical Change

Data	Category	Larger Category	Theme
Interviews	Personality traits in the past and current Instructional strategies in the past and current Perceptions of students in the past and current Students' response of current traits Students' perceptions of mathematics	1. Changes in personality traits, instructional strategies, and perceptions toward students	
Classroom observations	Classroom situations Students' willingness to ask questions and share opinions. Students' engagement in activities The use of multimedia to teach mathematics concept The use of videos to teach moral values		1. Personal and pedagogical change
Post-observation interviews	Using multimedia to teach mathematics concepts Changes in personal characteristics Using different approach to low-achieving students Introducing moral values through videos	1. Teaching and learning approach	
Field notes	Relaxing atmosphere in the classroom Interaction with students		

Data	Category	Larger Category	Theme
	Closed relationships between Budi and his students Students' engagement on the tasks Students' willingness to come forward and share answers		

Table I2

The Development of Theme Two: Personal Concept and Knowledge of CL

Data	Category	Larger category	Theme
Interviews	Defining CL Defining CL elements Giving examples of CL lesson CL methods Defining TGT Defining Jigsaw	2. Conception and knowledge of CL	
Classroom observations	Assigning groups to work cooperatively Telling cooperation values Showing movies of successful cooperation Assigning groups for discussion Assigning groups for group presentation Leading the whole class discussion	2. Knowledge of CL	2. Personal concept and knowledge of CL
Post-observation interviews	Introducing values for group work through movies Unable to name the CL methods Group effectiveness		

Data	Category	Larger category	Theme
	Benefits of working in groups		
Field notes	Nonexistence of CL methods Solving mathematics problems in groups Nonexistence of group roles Values of working together Variation of degree of positive interdependence Oppositional interactions		

Table I3

The Development of Theme Three: Students' Behaviour in Groups and Grouping Challenges

Data	Category	Larger category	Theme
Interviews	Giving examples of effective and ineffective groups Students' responses of group work Students' choice of group composition Homogenous group Grouping composition problems Recognising self-weakness of group composition Unable to resolve group composition problem Problems with passive students in groups Group conflicts	3. Students responses to group work and grouping challenges	3. Grouping challenges

Data	Category	Larger category	Theme
	Absence of group behaviour orientation		
Classroom observations	Grouping techniques Grouping composition Students choice of group composition Homogenous groups Uncooperative behaviour		
Post-observation interviews	Lack of grouping techniques Group effectivity Group engagement Having no solutions for passive students	3. Students' behaviour in groups and grouping challenges	
Field notes	Uncooperative behaviour in groups Friendship groups Homogeneous groups Problems with group composition Oppositional interactions		

Table I4

The Development of Theme Four: Conflicting Roles

Data	Category	Larger category	Theme
Interviews	Time problems Missing classes School assignment meetings Vice Principal jobs Spending too much time for administrative work	4. Vice Principal and teacher's role conflict	
Classroom observations	Telling reasons for missing two classes Roles and responsibilities as a Vice Principal Leaving the class during classroom observation		
Post-observation interviews	Leaving classes during lesson Missing classes Lack of teacher reliever Insufficient time to check students' work Extra work after school	4. Vice Principal and teacher's role conflict	4. Conflicting roles
Field notes	Assigning homework for students due to meetings Leaving the class Lack of group monitor Unable to teach Lack of sleep Vice Principal roles Guilty feeling of leaving the class		

Table I5

The Development of Theme Five: Institutional Challenges

Data	Category	Larger category	Theme
Interviews	Teacher-directed method for difficult topics Working in group habit Lack of school facility Lack of CL preparation	5. Institutional challenges	
Classroom observations	Using lecture to explain difficult mathematics problems Spending time in explaining mathematics concept Changing classes due to insufficient classroom facilities		5. Institutional challenges
Post-observation interviews	Teacher-directed method for difficult topics Insufficient school facilities	5. Institutional challenges	
Field notes	Lack of classroom facilities Using lecture in explaining mathematics problems		

Table I6

Five Remaining Larger Categories of the Interviews

Data	Category	Larger category	Theme
Interviews	Individual reward Group rewards Giving score Reward objectives Reward for motivation	6. Rewards	-
	Group assessment Criteria for group assessment	7. Assessment	-
	Group conflicts Giving examples of group conflicts Solutions to group conflicts	8. Group conflicts	-
	Personal experience in teacher training Teacher certification issues Conflicts with colleagues Job promotions	9. Career path	-
	Giving examples of gotong royong in groups Gotong royong activities with community Roles in community	10. Gotong royong	-

Table I7

Three Remaining Larger Categories for Classroom Observations, Post-Classroom Observation Interviews, and Field Notes

Data	Category	Larger category	Theme
Classroom observations	Solving mathematics problems in pairs Solving mathematics problems in groups Different ways of solving mathematics problems	6. Group tasks	
Post-observation interviews	-		-
Field notes	Open-ended task of group work		
Classroom observations	Checking homework Homework discussion		
Post-observation interviews	-	7. Mathematics homework discussion	-
Field notes	-		
Classroom observations	Lack of attention of other group presentation		
Post-observation interviews	-	8. Lack of attention to the presenting group	-
Field notes	Lack of attention to the presenting group		

Appendix J: Nawang's Larger Category and Theme Development

List of Tables

Table J1

The Development of Theme One: Personal Concept and Knowledge of CL

Data	Category	Larger category	Theme
Interviews	Experience in learning CL Defining CL Defining CL elements Learning CL Teachers' roles in CL CL methods Research in CL Criteria of group assessment Planning CL	1. Conception and knowledge of CL	
Classroom observations	Objectives of the lesson Grouping the students Naming the groups Group tasks Roles in groups Peer assessment Group assessment Assessment criteria Using multimedia in teaching Monitoring groups Assisting groups Evaluating groups Encouraging groups to give feedback Reviewing lesson		1. Personal concept and knowledge of CL
Post-observation interviews	Teachers' roles in CL lesson Doing assessment Planning CL lesson CL methods Heterogeneous groups Problem-Based Learning Reservations on CL methods Lesson reflection	1. Knowledge of CL	
Field notes	Clear lesson planning Repeated objectives Frequent monitoring Groups' engagement CL method		

Table J2

The Development of Theme Two: Planning of CL Lesson

Data	Category	Larger category	Theme
Interviews	Preparation of CL lesson Clear lesson objectives Advantages of good CL lesson planning Disadvantages of lack of lesson planning Preparing media for CL lesson Clear and unclear task instructions Steps in group discussion Doing reflection	2. CL lesson planning	
Classroom observations	Emphasis lesson objective Step by step instructions of the tasks Group naming Monitoring process Evaluating process Instructions on peer assessment Instructions on group assessment Comprehension checks on group tasks Comprehension checks on the lessons	2. CL lesson plan enactment	2. Planning of CL lesson
Post-observation interviews	The importance of good CL lesson planning Media support for CL lesson Teachers' roles in CL lesson The importance of clear instructions of the tasks Self-reflection on the lesson Plans for next lesson		

Data	Category	Larger category	Theme
Field notes	Comprehensive lesson objectives Comprehensive task instructions The importance of clear CL lesson plan Teachers' roles in executing CL lesson plans The emphasis of monitoring group work Self-reflection on the lesson		

Table J3

The Development of Theme Three: Students' Behaviour in Groups and Group Composition

Data	Category	Larger category	Theme
Interviews	Students' engagement in groups Students' positive response of CL lesson Low-achieving students The importance of heterogeneous group Grouping problems Benefits of small groups Drawbacks of big groups Giving authority to students in grouping Group roles Students' behaviour issues Absence of group behaviour orientation	3. Students' behaviour in groups and group composition	3. Students' behaviour in groups and group composition
Classroom observations	Grouping students Group naming Group roles Group monitoring Low-achieving groups	3. Students' behaviour in groups and group composition	

Data	Category	Larger category	Theme
	Group engagement Sitting arrangement group Assisting groups Group presentation		
Post-observation interviews	Weakness of sitting arrangement group Low-achieving group Self-reflection in grouping Students' engagement in groups Group monitoring Group effectiveness		
Field notes	Students' engagement in groups Promotive interaction Low-achieving group Sitting arrangement group Number of groups Group monitoring Positive interdependence Individual accountability		

Table J4

The Development of Theme Four: Assessment

Data	Category	Larger category	Theme
Interviews	The importance of group assessment Criteria of group assessment Criteria of group work Individual assessment Criteria of individual assessment Peer-assessment Assessing students in groups Assessing students individually	4. Assessment	
Classroom observations	Objectives of group assessment Steps of group assessment Criteria of group assessment Doing group assessment		4. Assessment
Post-observation interviews	Assessing groups during group monitoring Assessment criteria for 2013 Curriculum Assessment sheets Groups' rubric sheet	4. Assessment	
Field notes	Assessing while monitoring Comprehensive information of assessment Peer-assessment		

Table J5

The Development of Theme Five: Institutional Support

Data	Category	Larger category	Theme
Interviews	Collegial support MGMP CL sharing MGMP meetings CL Professional development The 2013 Curriculum Student-centred curriculum	5. Institutional support	
Classroom observations	Five "M" scientific approach Integrating "Five M" with CL		
Post-observation interviews	Five "M" scientific approach The implementation of Think-Pair-Share for "Five M" scientific approach The benefits of joining MGMP The functions of MGMP The objectives of MGMP The agenda of MGMP The activities of MGMP	5. The 2013 Curriculum implementation and MGMP	5. Institutional support
Field notes	Collegial support of the Indonesian language teachers		

Table J6

Three Remaining Larger Categories of the Interviews

Data	Category	Larger category	Theme
Interviews	Group reward Individual reward Kinds of reward	6. Rewards	-
	Implementation CL for Year 7 students Implementation of CL for Year 8 and 9 students	7. The implementation of CL in different levels	-
	Gotong royong activities in community The advantages of doing gotong royong	8. Gotong royong in community	-

Table J7

Two Remaining Larger Categories for Classroom Observations, Post-Classroom Observation Interviews, and Field Notes

Data	Category	Larger category	Theme
Classroom observations	Giving presentations Group's representative presentation Giving feedback to the presenting group	6. Group tasks	-
Post-observation interviews	-		
Field notes	Giving feedback Encouragement to give feedback		
Classroom observations	Using slides to show lesson objectives		

Data	Category	Larger category	Theme
	Using slides to show the material of the lesson Using pictures to elicit the lesson	7. The use of multimedia in teaching	-
Post-observation interviews	-		
Field notes	-		

Appendix K: Krisentia's Larger Category and Theme Development

List of Tables

Table K1

The Development of Theme One: Personal Concept and Knowledge of CL

Data	Category	Larger category	Theme
Interviews	Defining CL CL learning experience Defining CL elements CL methods Modification of CL methods Converting CL method names into Javanese and Indonesian Criteria of a group Mixed-gendered group Mixed-ability group Peer learning Peer coaching	1. Conception and knowledge of CL	
Classroom observations	Objectives of the lesson Grouping students Pair work Group composition Steps to do pair work Group criteria Mixed-gendered group Sitting arrangement group Peer coaching Discussions		1. Personal concept and knowledge of CL
Post-observation interviews	CL methods Group effectiveness Time-saving group composition The advantages and the drawbacks of sitting arrangement group composition Peer-coaching Mixed-ability groups Mixed-character groups Mixed-gender groups	1. Knowledge of CL	
Field notes	Peer-coaching Stated objectives of the lesson		

Data	Category	Larger category	Theme
	Prompt response of group activities The group readiness of the learning tools for finishing the task Mixed-gender group		

Table K2

The Development of Theme Two: Peer Coaching

Data	Category	Larger category	Theme
Interviews	After school activities for students The objectives of after school activities The advantages of the after school activities Learning to peer coach Low-achieving students High-achieving students Peer coaching in the classroom	2. Peer coaching	
Classroom observations	Assigning students to peer coach Sitting arrangement for peer coaching Mentoring in the group		2. Peer coaching
Post-observation interviews	The objectives of peer coaching The ways of doing peer coaching Working with other teachers to supervise peer coaching Follow up of peer coaching Report of peer coaching	2. Peer coaching	

Data	Category	Larger category	Theme
Field notes	Mentors and mentees in the class Sitting arrangement of the peer coaching The ways of doing peer coaching		

Table K3

The Development of Theme Three: Group Composition

Data	Category	Larger category	Theme
Interviews	Grouping techniques Mixed-gender groups Mixed-ability groups Mixed-character groups Ideal number for a group Time-consuming group composition Time-saving group composition Problems of group composition	3. Group composition	
Classroom observations	Sitting-arrangement group Leader-nominated group Mixed-gender group Friendship group Number of students in a group		3. Group composition
Post-observation interviews	Time-consuming group composition Time-saving group composition Weakness of sitting arrangement group Mixed-ability group Peer coaching	3. Group composition	

Data	Category	Larger category	Theme
Field notes	Mixed-gender group Sitting-arrangement group Leader-nominated group Negative interaction Fast group composition		

Table K4

The Development of Theme Four: Institutional Challenges

Data	Category	Larger category	Theme
Interviews	Time constrains Year 9 pass exams Year 9 lesson materials	4. Institutional challenges	
Classroom observations	Skipping materials Time limitation for tasks Rushing the groups to finish task		
Post-observation interviews	Sitting arrangement group for saving time Finishing some materials in a lesson Catching up materials Missing lessons due to Year 9 exams	4. Institutional challenges	4. Institutional challenges
Field notes	Classroom observation cancellation due to Year 9 exams Limited time for tasks Fast pace of learning		

Table K5

Four Remaining Larger Categories of the Interviews

Data	Category	Larger category	Theme
Interviews	Peer assessment Group assessment Group assessment criteria	5. Assessment	-
	Kinds of reward Group reward Individual reward	6. Reward	
	Assistance for students' personal problem Working with difficult students	7. Other roles	-
	Doing gotong royong in community Sharing skills with community group Community meeting	8. Gotong royong in community	-

Table K6

Two Remaining Larger Categories for Classroom Observations, Post-Classroom Observation Interviews, and Field Notes

Data	Category	Larger category	Theme
Classroom observations	Silent reading Pair reading	5. Literacy	-
Post-observation interviews	Motivating students to read Reading habits		
Field notes	Reading corner		
Classroom observations	Showing objectives through slides Showing pictures through slides Showing texts through slides Using videos	6. The use of multimedia in teaching	-
Post-observation interviews	-		
Field notes	-		