Transforming Indonesian teachers' understanding and implementation of critical pedagogy of place as a foundation to foster students' critical and creative thinking

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ABSTRACT

Addressing the need for fostering critical and creative thinking (CCT) in primary education,this study investigated how critical pedagogy of place (CPoP) can support CCT in Grade 1classrooms in the Bandung Metropolitan Area of Indonesia. The primary research questionguiding this study is: *What does a CPoP approach offer for CCT possibilities in Indonesian primary schools*?

Using a community-based action research approach, the study explored teachers' intentions, understanding and classroom practices related to CPoP. The research involved 12 Grade 1 teachers in the Bandung Metropolitan Area. Data were collected through interviews, focus group discussions and classroom observations. The findings reveal that CPoP offers the potential to engage students with their local culture, environment and community, fostering deeper social and environmental awareness.

Key findings indicate that teachers demonstrated varying levels of engagement with CPoP. Some exhibited basic understanding, focusing on initial implementation without critical reflection. In contrast, others showed signs of potential transformation, integrating CPoP more deeply into their teaching practices with a focus on critical inquiry and student-centredlearning. However, challenges such as overcrowded classrooms, time constraints and traditional pedagogical norms hindered the full realisation of CPoP's potential. The challenges emphasise the necessity of specific strategies to overcome these barriers, whichare essential for the successful implementation of CPoP.

This research bridges CPoP with CCT, providing valuable insights into how localised pedagogies can nurture CCT in young learners. It highlights the importance of sustained professional learning and adaptable teaching strategies, particularly through teacher professional learning supported by communities of practice, to address the unique challenges faced by Indonesian primary schools. This study emphasises the potential of CPoP to foster CCT in young learners and contribute to meaningful educational reform in Indonesia. Additionally, the findings possess practical implications for curriculum development, particularly in integrating place-based approaches within the *Merdeka* curriculum to promote meaningful, inquiry-driven education that prepares students for facingand solving real-life issues.

Keywords: Critical Pedagogy of Place (CPoP), Critical and Creative Thinking (CCT), primary education, community-based action research, teacher professional learning (TPL), Communities of Practice (CoP).

DECLARATION

I certify that this thesis:

1. does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university
2. and the research within will not be submitted for any other future degree or diplomawithout the permission of Flinders University
3. to the best of my knowledge and belief, does not contain any material previously published or written by another person except where due reference is made in the text.

Signed.....Desiani Muliasari.....

Date 24 January 2025

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I dedicate this work to every teacher striving to make a difference in the lives of young learners. May this research contribute in some small way to the incredible work you do everyday, helping to foster critical and creative thinkers for the future.

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GLOSSARY

ACARA	Australian Curriculum, Assessment, and Reporting Authority
ACECQA	Australian Children's Education and Care Quality Authority
AR	action research
BMA	Bandung Metropolitan Area
BSKAP	Curriculum Standards Agency, Educational Assessment. An Indonesian agency responsible for developing curriculum standardsand conducting educational assessments.
C21	21st Century
CCT	critical and creative thinking
CoP	Community of practice
CPoP	critical pedagogy of place
EYLF	Early Years Learning Framework
GDP	Gross Domestic Product
K13	*Kurikulum* 2013 (2013 curriculum)
MoECRT	Ministry of Education, Culture, Research, and Technology
OECD	Organisation of Economic Co-operation and Development
PBE	place-based education
PBL	project-based learning
PISA	Program for International Assessment
PPP	*Profil Pelajar Pancasila* (*Pancasila* Student Profile)
SEB	Schools of Eastern Bandung

SNB	Schools of Northern Bandung
SSB	Schools of Southern Bandung
SWB	Schools of Western Bandung
TPD	teacher professional development
TPL	teacher professional learning

CHAPTER 1: INTRODUCTION

> We must embrace places from which we came, embracing all that succeeds and fails. Wemust return home. Remember who we were and how we became who we are. (Whitaker, 2010, p. 123)

1.1 Setting the scene

I begin my thesis with the quote by Whitaker (2010) because it reflects my journey as a doctoral student conducting this study. It emphasises the connection between my identity as an Indonesian and the places I inhabit. This profound relationship with my homeland has shaped my perspectives, values and approach to my academic endeavours. By embracing the successes and failures of the places I come from, I have attained a profound understanding of who I am and how I can contribute to my communities as an educator whohas had the opportunity to study abroad.

This journey has made me aware of Indonesia's diverse and dynamic nature. Indonesia is anation of over 18,000 islands, five of which are large, while the rest are small islets. According to *The World Factbook*, produced by the Central Intelligence Agency (2023), Indonesia is the world's largest archipelagic state. Home to nearly 280 million people (WorldPopulation Review, July 8, 2024), it is the fourth most populous country on Earth. The population consists of around 1,300 ethnic groups scattered across 1.9 million square kilometres of diverse terrain (Ananta et al., 2023). From bustling cities and active volcanoesto tranquil rural villages, Indonesia's landscape is as varied as its people. People from Sabang (in westernmost Indonesia) to Merauke (the easternmost part of Indonesia) reflect varying cultures, historical foundations, traditions, social and political views and religious beliefs, and variations in primary economic activities and distribution of wealth. The richnessand diversity of people and environments in Indonesia present particular challenges and complexities in seeking to ensure equity of access to education and economically viable futures for individuals and communities.

Although the government seeks equity in the provision of schooling facilities, teacher quality and curriculum entitlement, there is much variation across Indonesian schools due to environmental location, local culture and values, and contextual conditions, including resourcing, teacher professional learning (TPL) and leadership. Based on my experiences, some schools have inadequate school facilities, such as insufficient classroom space and alack of prospects for TPL. This compromises the opportunities to develop meaningful and deep learning essential for the development of critical and creative thinking (CCT).

According to the World Bank (2020a), in 2020 Indonesia spent 20% of its gross government spending on education, ranking among the top countries in terms of education expenditure when assessed as a proportion of total public expenditure. However, this expenditure only accounts for

approximately 3% of Indonesia's Gross Domestic Product (GDP) (WorldBank, 2020a). Despite the significant proportion of government funds invested in education, the Program for International Assessment (PISA) in 2018 located the performance of 15-year- old students from Indonesia in reading, science and mathematics in the lowest quartile of countries participating in the assessments. Indonesia had only 1% of students performing at level 5 or higher in mathematics, whereas other Asian countries had a far greater percentage of students performing at this level, for example, Singapore with 37% and China with 44% (Organisation for Economic Co-operation and Development [OECD], 2019). Also of concern is that 70% of Indonesia's 15-year-olds failed to demonstrate basic literacy skills in the 2022 PISA reading and mathematics assessment (OECD, 2023). Although these results are of significant concern, Indonesia continues to make positive progress in increasing access to education for females, and children and young people living in rural andremote areas. The World Bank's (2020b) report on the Promise of Education in Indonesia provides insight into the importance of not only accessing education but ensuring it is a quality education, stating:

> *Going* to school is not the same as *learning*. How much students learn throughout the education system has a direct impact on how productive they can be as adults.If they are equipped with the skills they need for the job market, Indonesia's youth have the potential to boost Indonesia's overall productivity, economic growth and prosperity. (p. 3)

The Indonesian Government is invested in enhancing the quality of education for its young citizens and has introduced a range of national initiatives and policies designed to improve the educational experiences and results for all students regardless of their location or ethnicbackground. These initiatives aim to fulfil the demands of our global society in the 21st century (C21), which requires a focus on developing capacities such as CCT skills, technological literacy, and cross-cultural competencies to prepare citizens for a rapidly changing and interconnected world (OECD, 2018; World Bank, 2020b). In addition, with Indonesia having the largest Muslim population in the world, religion remains central to neweducational policies.

In 2020, the Indonesian Ministry of Education and Culture launched the *Profil Pelajar Pancasila* (PPP) or *Pancasila* student profile, as illustrated in Figure 1.1. This policy was designed to acknowledge long-standing religious priorities and cultural expectations while embracing the need to ensure students were developing C21 capacities, including CCT to enable them to solve complex problems, think independently and innovate. *Pancasila* is an Indonesian national ideology deriving from the Sanskrit words *panca* (five) and *sila* (principles) (Ahmad Irfan & Cahyo, 2020). The five principles are religious beliefs, humanity, unity, democracy and social justice. Hoon (2017) notes that *Pancasila* plays a crucial role in guiding the ethical conduct of Indonesians. *Pancasila* has been promoted by long-serving governments, leading to generations of adherence to these principles, especially in the education system. The challenge for the PPP policy is to juxtapose the

country's deep- seated religious beliefs and principles with C21 skills, such as CCT. CCT may create a context where students question existing norms and consider alternative perspectives, whichmight lead to challenging the status quo. By developing CCT capacities, students are presumed to be better prepared to engage with global issues and to be able to contribute positively to their communities and beyond (Facione, 2011; Halpern, 2014; Paul & Elder, 2019). Some, therefore, suggest that PPP is designed to integrate students' cognitive and attitudinal capacities as Indonesian and global citizens (e.g. Shofa, 2021), whereas others suggest the PPP should support Indonesian school-aged students to be "competent, characterful, and behave according to the values of Pancasila throughout their life" (Hastangka & Lasiyo, 2022, p. 127).

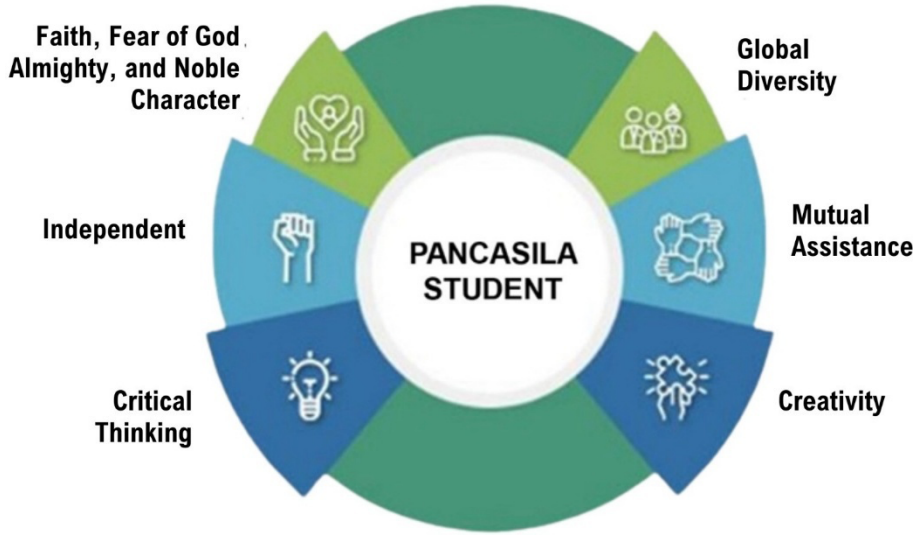

Figure 1.1 Pancasila student profile (Kemendikbud, 2020b, p. 40)

While the Indonesian Government generated the PPP for the country's education systems, it seems there was limited attention to how to support teachers in developing new knowledge and pedagogical competencies to implement the policy. For example, in the student profile (Kemendikbud, 2020b), CCT is prioritised, but how teachers themselves become critical and creative thinkers has not been supported – support for professional learning is especially needed where teachers are also products of traditional models of schooling that favouredtransmission models of teaching for student reproduction of prescribed ways of knowing, doing and understanding (Revina et al., 2023). As noted earlier, these traditional models have failed to support the high levels of literacy and numeracy outcomes needed for C21.The PPP implies that teachers need new ways of understanding the complexities of educating students for life in C21 in the different contexts of Indonesia.

Connecting teaching practices to broader purposes of education and their local environmental contexts has generated a research focus known as critical pedagogy of place (CPoP) (Gruenewald, 2003a). The CPoP model focuses on how teachers create a meaningful learning environment and make use of local environmental resources to support students' capacities to be

critical and creative global citizens (Cicchino et al., 2023; Greenwood, 2008; Gruenewald, 2001; Smith, 2021). I consider CPoP applicable to teachers'understanding of their work in applying the PPP policy in Indonesia's culturally diverse context. My research focused on teachers' knowledge of their work aligned to the PPP policy. I explored whether utilising the CPoP as a tool for meaning-making produced insightsthat can support Indonesian teachers in addressing expectations of the Indonesian Government's education policies, including the PPP. CPoP appears to hold potential for teachers in diverse locations to understand how to draw on place-based education (PBE) by bringing in environmental resources to facilitate student learning. I suggest that teachers witha deep understanding of a CPoP approach in designing their curriculum offerings can engage students in contextually authentic learning opportunities.

This research investigated how to effectively support teachers' understanding and implementation of a CPoP curricular approach to promote CCT in students in Grade 1 of primary school in the Bandung Metropolitan Area (BMA) of Indonesia. The following sectionsof this chapter expand on the importance of CCT, the value of using CPoP as an approach in the Indonesian context, the importance of TPL to support teachers' understanding and implementation of CPoP and highlight the justification and significance of the research before clarifying the research aims and questions. The chapter concludes with a summary ofthe thesis structure.

1.2 The Importance of Critical and Creative Thinking

To meet the evolving social, political and technological landscapes of C21, the world needsyoung people who are adaptable to future forms of global citizenship (OECD, 2018). However, global citizenship comes with its own challenges and complexities, including a more competitive, globalised economy and a workforce requiring collaboration between people worldwide within a context of diverse cultural, religious and economic expectations and practices. To engage successfully with others in a global context requires CCT skills to foster an understanding of the reasons for diversity in beliefs and values and how to draw oncontextual expertise to build successful and harmonious global economic and social communities (Paulus et al., 2016; Singh & Gera, 2015). This need is particularly relevant as students today are positioned differently from the generations of their parents, growing up in an increasingly linked and multicultural world where these skills are essential for navigating and contributing to a diverse global society (Ilma et al., 2023; Jensen et al., 2011; World Economic Forum, 2023). Thus, they need to be prepared and supported in their capabilities to embrace global connectedness and to rethink and revise their sense of identity and place in society (Bourn, 2008; Bourn et al., 2017).

The capacity to acknowledge and reflect on diversity through CCT from a global perspective is crucial to creating ideas and enacting policies and practices to solve global issues such asclimate change and the COVID epidemic. CCT is among those capabilities needed by global citizens, with

educationists, policymakers, and leaders agreeing it is essential for a successful life and work in the C21 (Ab Kadir, 2017). CCT is the capacity of the mind to actively generate and process all necessary information to understand the world around us (Paul & Elder, 2019). CCT enables us to recognise the ways an individual's sociocultural andhistorical reality shapes their lives and selves and to realise that reality is a result of humans thinking and acting differently (Freire, 1974; Mireanu, 2022). Therefore, while the cognitive capacities of CCT can be taught and developed, its outcomes will be diverse and contingent upon an individual's history, values and contexts.

As mentioned, in Indonesia, the government has prioritised CCT as a fundamental and urgent skill required for the population to become global citizens as part of its PPP. The policy supports the proposition that CCT can be learned. The alignment of students' real-life experiences and challenges has been regarded as a method to facilitate them to learn the CCT skills required to engage with global issues more effectively by being more able to read the world (Freire, 1974; Roche, 2014; Rodd, 1999). The PPP assumes that students need tobe able to bring their CCT skills to produce ideas or develop solutions to problems into actuality. They need to have a chance to explore the world, address local and global issues,and have opportunities to participate in decision-making about real-life issues (Maker et al., 2015). Real-life problem-solving activities are a potential strategy to connect the classroom to real-life experiences that help students learn CCT skills (Carvalho et al., 2015; Wlodkowski, 2008). Hence, if students are placed in their learning as active agents engaged in focusing on local or global issues as opposed to a more behaviourist understanding of learning as rote textbook learning, their CCT is assumed to be more likely to be enhancedand translated to ongoing issues as they develop throughout their schooling (Tuononen etal., 2022; Ye & Xu, 2023).

While the Indonesian Government recognises the importance of CCT through the PPP, which prioritises CCT development of students, expectations of how teachers develop their own CCT skills and apply them in teaching are unclear. Teachers' educational experiences through their schools and universities and teaching experiences tended not to employ a CCT approach; instead, they have experienced an obeying, do as I say and rote learning culture (Rahman et al., 2021; Zulfikar, 2010). This shift in teaching expectations provided by the PPP may be challenging to many teachers in Indonesia without extensive and in-depth professional learning support. Teachers need to become models of CCT to support their students in developing CCT capacities (Lowell, 2014; San-Martín et al., 2019).

1.3 Critical Pedagogy of Place as An Alternative PedagogicalApproach

A new form of C21 pedagogy that is relevant to new demands and responds to shifting conditions is urgently required, as it is argued that students now live in an environment where local diversity and global connectedness influence the shaping of their identities (Comber, 2015; Exley, 2008).

Historically, Indonesian education consisted of rote forms of learning. Lessons often centred on teachers as the providers of meaning and understanding instead of students as active learners and constructors of meaning and interpretation (Anjarwati, 2020; Sopantini, 2014; Zulfikar, 2010). However, teachers can no longer be information givers and be aligned with the intentions of the PPP, but instead must encouragestudents to become active, knowing subjects, engaged, critical and participatory agents in the learning process (Freire, 1974). Giroux (2020) explains that students should not simply absorb information; they must engage actively in the learning process, critically questioning and constructing their own understanding rather than passively receiving knowledge.

CPoP is, therefore, an alternative pedagogical approach to the persisting traditions of directive and instructive teaching. CPoP is an approach that can link teachers' and students'identities with place and community to provide context to facilitating education for global citizenship. As a teaching approach, CPoP embraces the experiences of human beings in their connection with others and with nature and includes cultural, political, economic and ecological dynamics (Gruenewald, 2003b). The CPoP approach aims to enlighten students about the potential they have to shape the world they live in and create the world as they imagine it. CPOP is a place-based educational initiative designed to engage teachers andstudents in the direct practices of local life and the political processes involved in comprehending and influencing local events (Mynbayeva et al., 2018). My study represents the first effort to introduce and systematically explore its potential in Indonesia. Traditional Indonesia teaching practices, which rely heavily on rote learning and acher centered approaches, do not align with participatory, place-based focus of CPoP. This research introduces CPoP as a novel pedagogical framework, offering Indonesian teachers an opportunity to integrate local culture and ecological contexts into fostering CCT.

The idea of using CPoP in my research emerged during a visit to a regional school in South Australia. As a newly arrived Indonesian, I was deeply inspired by the school's setting and approach to learning. Located in the arid outback of the Flinders Ranges, the population of the school I visited was predominantly Aboriginal and Torres Strait Islander children. The school embraced a child-centred approach, creating areas that actively promoted creativity and exploration. These spaces included vegetable patches, a fairy garden, a *Wiltja* (shelter)tree house and a mud kitchen, all thoughtfully integrated with Indigenous artefacts. The school's environment not only fostered creativity but also reflected the cultural values and traditions of the community (Harrison & Sellwood, 2016; Malone, 2016).

In relation to their professional learning journey, the teachers at this outback school had just participated in a professional learning program specifically using the Reggio Emilia approach. The teachers at the school embraced the Reggio Emilia principles they learned, such as a child-centred focus, the importance of the learning environment, collaboration, and fostering creativity, because

they were pertinent to the culture of the school and its families, making them practical and implementable (Hattam et al., 2022; McNally & Slutsky, 2017). They engaged in reflective practice both during and after their professional learning, realisingthat many of the child-centred practices they had been implementing were already aligned with Reggio Emilia principles – they just had not documented or shared them with others (Schon, 2016). They reflected on the way they facilitated the student's curiosity and imagination through an exploration of the lifecycle of the monarch butterfly, which was prompted by the children's discovery of a butterfly cocoon at the bottom of the school garden. The children also explored their responsibility in maintaining the ecosystem for a monarch butterfly and upholding their traditional cultural values. After the professional learning sessions, the teachers decided to deepen their understanding by more consciously implementing the Reggio Emilia principles, further integrating them into their daily practices. This experience highlighted the importance of contextualising professional learning to fit the unique cultural and environmental context of the school, a concept that resonated with my exploration of CPoP.

During my visit, I observed an affluent learning environment where students were fully engaged in the project on monarch butterflies. For two terms, the teachers facilitated this interest with learning experiences like creating metamorphosis boxes, observational drawing, painting and making a community mural. Families were also involved, collaborating in activities such as supporting the students to create the mural. This project not only educated students about butterfly lifecycles but also environmental care (Gregory & Moosha,2021). The teachers documented the project in a published book showcasing the students' artwork, reflections and the various stages of the butterflies' development. This publication served not only as a record of the student's learning journey but also as a resource for other educators and a source of pride for the community. I was amazed by how the teachers integrated Australia's national Early Years Learning Framework (EYLF), prepared by the Australian Children's Education and Care Quality Authority (ACECQA), and Aboriginal and Torres Strait Islander values into their pedagogy. The teachers built strong community relationships and involved parents in school activities. Teachers recognised and encouraged children's voices, fostering student curiosity and reflection (Harris & Manatakis, 2013). Whilethe EYLF guides early childhood education, the project's focus on environmental awareness and CCT provides a smooth transition to the learning goals emphasised in the Australian curriculum for school-aged students, which is overseen by the Australian Curriculum, Assessment, and Reporting Authority (ACARA) version 9. Both frameworks show continuingpriorities of the Australian curriculum that value inquiry-based learning and nature and community connection, preparing students to develop a comprehensive understanding of their local context as they progress through their educational journey (Gruenewald, 2001; Lumber et al., 2017; Stevenson, 2008).

I reflected on my home country, Indonesia, where primary schools are spread across the country

and each school is in a place with its particular nature, culture, values and people. The diversity of the environments between each school may present opportunities for different features of pedagogical practices. I remembered my conversations with an Indonesian woman from Lombok, West Nusa Tenggara, who also gave me another inspiringmeaning of place. She grew up in a coastal area and considered the sea as her life as she got in touch with it almost every day. She loved the sea and showed her concern for the marine environment through activities that supported the sustainability of the sea. She found contradictions in the way people in coastal areas, specifically in Lombok, make meaning of their place. She said the fishers only thought of catching as many fish as they could for commercial purposes, taking advantage of the sea without thinking of sustaining sea life, and/or marine environmental issues. The woman's concern for the coastal area and marine life motivated her to develop a community program to make the people who live there view the importance of concern for marine environmental issues and sustaining marine life. She urged the fishers to think and act in ways that would protect and support sea life. By advocating for environmental stewardship and sustainable fishing practices, she hoped to instil deeper appreciation and responsibility towards the sea among the coastal community.So, by developing a community program to educate, she promoted a change of practices.

These two inspiring experiences made me realise the importance of making meaning of theplace people inhabit and raising a deep awareness of place with children. If children have asense of belonging to a place, then they will more likely understand and participate in the development and sustainability of the place (Harris & Manatakis, 2013; Willms, 2001).

Moreover, with the demand for C21 capacities like CCT, children are facing a fast-changing world that is filled with potential problems and opportunities. If we want children to create solutions to problems and be capable of fulfilling the requirements of the opportunities, then I believe they need to have hands-on activities related to real-life issues in their surroundings (Smith, 2002; Sobel, 2002). Hands-on activities encourage children to engage in experientiallearning, where they gain knowledge and develop practical skills such as problem-solving, critical analysis, and creativity (Yannier et al., 2021). I came to see that CPoP facilitates the CCT of students, enabling them to see themselves, others and their surroundings, and to understand what happens or might develop in those surroundings, engage in and find a solution to the problems that emerge near them. Potentially, our ability to observe, understand, communicate and act on environmental change is expedited by recent transformations in digital technology development. As a facilitator of learning, I saw the needfor teachers to be motivated to create learning environments that support a better future for their students. A learning environment that actively engages and supports children. Children are encouraged to share ideas, experience new things, explore things around them, collaboratively work with their peers, family and others, and reflect on learning activities they have experienced. This is more likely to improve their capacities to contribute to solving global issues in

the future (Cheung, 2016; Harris & Manatakis, 2013; Padget, 2012; Pujiastuti & Lestari, 2020; Rodd, 1999).

Teacher use of a CPoP approach can encourage student propensity towards belonging, and an awareness of themselves in relation to others in a place. CPoP as a place-conscious education is grounded in PBE. By this, I mean it is grounded in a pedagogy that develops learner concerns for the wellbeing of social and ecological environments. A CPoP approach focuses on how students can understand the world, decode what they see and reflect and document it based on concrete examples and situated, lived experiences of the world (Comber, 2015; Freire, 1998; Gruenewald, 2003a; Gruenewald & Smith, 2014). Thus CPoP is an alternative approach for Indonesian teachers that will facilitate the students reflection, identify and give voice to their own lived experiences, cultural beliefs, practices and activitiesof their communities in a socially and ecologically aware way (Lowenstein et al., 2010).

Through a CPoP approach, students explore and learn about what needs to be protected, changed, conserved and renewed in their world (Bowers, 2008), the importance of which is contextualised by the knowledge that it is they who are going to be the agents of environmental and social change in Indonesia (Kelley & Pelech, 2019).

I recognise CPoP is *one* approach and not *the* approach to support teachers being more critical and creative in their thinking. A key principle of the PPP is the development of teacher and student agency with regard to their thinking. Thus, my research explored the use of CPoP to support teachers in developing their own CCT and to connect with the context in which they are living and working. Teacher learning is fundamental to student learning. Therefore, teachers need authentic experiences on how to develop their own CCT and how to apply this in their plan for developing CCT in students. The use of CPoP is therefore hypothesised to be of value for its potential to promote engagement in relevant andlocal contextual learning.

1.4 The Importance of Teacher Professional Learning in The Indonesian Context

TPL is essential for educational improvement and the professional growth of educators (Zinger et al., 2019). TPL provides chances for teachers to update their pedagogical competencies, enhance their content knowledge and integrate new technologies into theirclassrooms. Regular TPL can cultivate a culture of ongoing enhancement and reflective practice, enabling teachers to adjust to changing educational requirements and more effectively address their students' needs (Darling-Hammond et al., 2017).

CCT skills are emphasised as one of the main profiles Indonesian students should build in the national curriculum, crucial for academic achievement and for preparing students to navigate

complex social and professional environments (Kemendikbud, 2020b; OECD, 2018). CCT skills are considered vital for students' overall cognitive development, enabling them to analyse information critically, solve problems creatively and think independently (Paul & Elder, 2019). CCT skills are linked to better academic performance, improved problem-solving abilities, and higher levels of student involvement (Álvarez-Huerta et al., 2023; Sankar & Benjamin, 2023; Tzachrista et al., 2023). To meet the educational emphasison CCT, Indonesian teachers must possess the requisite knowledge, skills and strategies tofoster CCT in their classrooms. I believe that this requires comprehensive TPL that focuses specifically on a teacher's CCT capacities.

Unfortunately, data from the Indonesian Ministry of Education and Culture in 2019 show that the highest score for the Indonesian teacher competency test (the *Uji Kompetensi Guru*) among primary school teachers was only 58.4 out of 100, indicating substantial gaps in teacher knowledge and skills on their pedagogical and professional competencies (Kemendikbud, 2020a). Furthermore, the data from Kemendikbud (2020a) reveals that teachers' abilities to foster CCT are underdeveloped. Many teachers remained focused on transferring knowledge through closed questions and did not effectively stimulate students'CCT capacities. This finding recognises the importance of TPL in Indonesia and highlights significant areas for improvement, specifically CCT.

In response to the gaps in teacher knowledge and skills as a result of the teacher competency test (Kemendikbud, 2020a), enhancing TPL programs has become a priority. Efforts are being directed towards designing and implementing professional learning initiatives that emphasise active learning strategies, collaborative planning and reflective practices (Kusanagi, 2022; WorldBank, 2020b). Effective TPL initiatives aim to provide teachers with strategies to promote CCT in their classrooms. This type of TPL would be unlike typical professional learning opportunities for teachers, which tend to be generic, short-term and lecture-based and do not provide the hands-on, practical experiences that teachers need to effectively implement new strategies in their classrooms (Rahman, 2021;Revina, 2020). Sujana (2008) argues that curriculum development should involve teachersas agents of change by encouraging them to reflect critically on their teaching. The introduction of the *Merdeka* curriculum (also known as the emancipated curriculum), launched in 2022, offers the potential for reflective critical practice. The curriculum was designed to foster teachers' competence in developing and encouraging students' CCT in order to be responsive to changes in their environment.

1.5 Justification And Significance of The Study

My study was prompted by the demand for C21 skills of CCT in the Indonesian education system and the need for practical application of day-to-day classroom activities as a response to globalisation (Cheng & Wan, 2017; Kemendikbud, 2020b). In partnership with teachers, the study explored the supporting conditions for CCT in Indonesian classrooms. It also sought to explore

Indonesian teachers' awareness of the environmental changes and their practices that might support student learning. My study investigated the conditions for effective teaching programs that support teachers adopting CPoP to improve students' CCT.

CCT needs to be comprehended by teachers in order to create the learning environment that develops these skills for students. I recognise that in some instances, teacher understanding CPOP can pose difficulties in translating the idea from one language and culture to another. Specifically, as the genesis of the idea for my thesis emerged from a visit to a remote Australian school, the ideas in English from a Western nation's example need to be translated into another language in a different cultural context. In my study, Bahasa Indonesia is one of the Asian national languages, and English and Australian Indigenous languages are used in Australia. Rajab and Wright (2018) contend that contemporary meanings in the teaching-learning relationships, such as the critical thinking skills developedby a CPoP approach, may be lost in translation without considering the importance of process and context. Cheung (2016) argues that Western ideas about promoting the creativity of students need to be adapted and curriculum-based teaching practices informed to enable a successful transfer of the ideas and practices to an Asian cultural context. Therefore, I understand that Western pedagogies must be explicitly explained and understood by teachers in the different social, cultural and ethnolinguistic contexts of Indonesia if they are to be successfully integrated into Indonesian classroom teaching andlearning.

Providing an example of contextual translation, the concept of critical thinking among Indonesian teachers was for some time regarded as akin to criticising**,** and it was therefore assumed that those who are recognised as critical thinkers are those who criticise too much (Muliasari, 2016). On the other hand, there is a difference between "critiques that seek to expand consciousness and harsh criticism that seeks only to attack" (hooks, 2010, p. 137). In my research, I encountered similar challenges with contextual translation, particularly when translating teachers' comments into English. For instance, the term *real world* was used by teachers as *dunia nyata*, which carries a broader connotation, but what they actually meant was real life, which is more specific to their immediate context.

My research was premised on the importance for young Indonesians to be knowledgeable about their environments and build a sense of engagement and belonging to a place. My research aimed to foster future-focused critical and creative citizens because today, Indonesia faces intricate environmental, social and economic pressures due to natural disasters, such as floods, drought, earthquakes and volcanic eruptions and, more recently, the COVID-19 pandemic (Olivia et al., 2020; Putra et al., 2020; Taylor & Peace, 2015). In addition to these environmental and health disasters, human activities in Indonesia are causing significant environmental problems, such as deforestation and unsustainable land management practices, leading to landslides and flooding (Burck et al., 2014). Factories and automobile emissions damage the qualities of the air, land and

water necessary for people's livelihoods, while the congestion, traffic and social dysfunction in densely populated cities threaten people's health and wellbeing (Prabawani, 2017). My study contributes to the current body of knowledge about the implementation of CPoP in the C21 curriculum as an alternative pedagogical approach and will help to fill a gap in research on CPoP in the Indonesian context. My study is significant in that it: (i) attempts to inform teaching approaches from CPoP research in Indonesian primary schools; (ii) seeks todo this in Indonesia, where such approaches have rarely been attempted; and (iii) explores CCT in Indonesian primary school contexts in which research regarding this is still limited.

My study is expected to enrich the literature on CPoP for primary school children. The studyresults will be disseminated to the participants' teachers and educators, such as school leaders and policymakers, as it is essential to provide primary school teachers and teacher educators with expanded repertoires of practice for effective implementation of the curriculum utilising CPoP. It will also be published more broadly to inform future teaching practices.

1.6 Research aims and research questions

My study provoked an investigation on how to effectively support teachers' understanding and implementation of CPoP practices to promote CCT through TPL in their Grade 1 primary schools in theBMA of Indonesia. The central research question is:

What does a CPoP approach offer for CCT possibilities in Indonesian primary schools?

Five specific sub-questions guided the design of the study:

1. What are teachers' intentions in implementing CPoP? (Study 1)
2. How do teachers understand CCT through TPL? (Study 1)
3. How do teachers understand CPoP as part of classroom teaching practices through TPL? (Study 2)
4. What are the enablers and inhibitors of implementing CPoP in fostering the students'CCT? (Study 2)
5. What are the teachers' observations about students' responses to CPoP implementation? (Study 2)

1.7 Thesis structure

This section describes the structure of the thesis. Chapter 2 presents a review of the literature that outlines definitions and descriptions of CCT and CPoP. It explores the relationship between CCT and teaching and learning specific to children. Chapter 3 explainsthe combination of CPoP and CCT as my model and integrates it into a TPL program model.Chapter 4 outlines the methodology of my research. It presents the methods of the researchconducted and how they help to answer the research sub-questions. Chapters 5, 6 and 7 detail the findings about the teachers' learning

and students' responses to the learning. Finally, Chapter 8 concludes my thesis with recommendations for policy and practice and anoverall review of the study. The structure is summarised in Figure 1.2 below.

Figure 1.2 Thesis structure

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Chapter 1 outlined the aim of my thesis, which investigates how to support teachers' understanding and implementation of the CPoP approach to promote CCT. To do this, my research included analysing the impact of teachers' engagement with a CPoP approach on students' learning and whether this approach supports the development of students' CCT. Chapter 1 explained that CCT is a vital element of the Indonesian Government's PPP policy (refer to Figure 1.1). I will review the existing literature on what is known about TPL and CCTin primary schools and CPoP in educational settings, thereby identifying gaps in knowledge that align with my research context and purposes.

The literature review in this study drew from a list of key search terms selected from an analysis of the research questions (Lawrence & Brenda, 2016). Four key areas emerged from this process and formed the basis for the structure of this chapter: TPL, CPoP, Primary Education in Indonesia and CCT. Search terms were entered into the databases available atFlinders University – ProQuest, Google Scholar, and ERIC – with peer-reviewed research, systematic reviews, empirical research and policy documents forming the primary sources ofinformation. Boolean operators (e.g., AND, OR) were used to combine terms and refine searches, while filters were applied to prioritize peer-reviewed research, systematic reviews, empirical studies, and policy documents published within the past 20 years.

The following are examples of key search terms and combinations used during the literature review:

- "Critical Pedagogy of Place" OR "CPoP"
- "Critical and Creative Thinking" AND "Indonesia"
- "Teacher professional learning" AND "place-based education"
- "Community of Practice" AND "Critical Pedagogy"
- "Teacher intentions" AND "implementation of new pedagogy"

Four key areas emerged from this process and formed the basis for the structure of this chapter: TPL, CPoP, Primary Education in Indonesia and CCT. These areas provide the conceptual framework for this literature review and inform the design of this research.

2.2 Teacher professional learning

Chapter 1 introduced the idea that TPL is a necessary mechanism for teachers learning howto enact a CPoP approach. There is a significant body of literature on TPL indicates its significance of moving from what is described as more traditional models of training and development (such as

conferences and workshops) to teachers' being active agents in their learning, often with the support of an experienced mentor (Easton, 2008b; Fullan, 1993, 2007; Sparks et al., 2000; Stoll et al., 2012; van der Heijden et al., 2018; van der Heijden et al., 2015). However, the current TPL landscape in Indonesia remains dominated by outdatedpractices that prioritise generic, short-term training sessions over context-specific, long-term professional development (Rahman, 2021; Revina et al., 2020; Supriatna, 2011). These traditional TPL models have been critiqued for their inability to foster deep, sustained learning. Research shows that one-size-fits-all approaches, which focus primarily on theoretical instruction, fail to provide teachers with the practical skills needed to address the complex, evolving demands of classrooms (Hawley & Valli, 1999; Opfer & Pedder, 2011; Scherff, 2018; Supriatna, 2011), and it is recognised as not ideal for meeting teachers' individual continuing learning needs (Darling-Hammond et al., 2009; Germuth, 2018). In Indonesia, traditional TPL models are often favoured for their simplicity, scalability and cost-effectiveness, as they can be distributed to many teachers at minimal costs. A prominent example of this is the cascade model, frequently used because it enables the government to engage a substantial number of teachers for minimal expenses (Revina et al.,2023). Despite its economic efficiency, the cascade model has significant limitations. Researchers have discovered that educators engaged in cascade training frequently fail to attain a comprehensive knowledge of the concepts introduced in these workshops, leadingto gaps in their capacity to effectively apply these ideas in their classrooms (Turner et al., 2017).

The focus on short-term, low-cost solutions tends to prioritise quantity over quality, neglecting the specific needs and contexts of individual teachers, especially in rural and underserved areas. This exacerbates the issue of disconnected learning, where teachers areoften unable to apply their acquired knowledge to their local teaching contexts (Supriatna, 2011). This failure to address context-specific needs is particularly evident in rural and under-resourced regions, where access to high-quality, continuous professional learning islimited (Revina et al., 2020).

My research aimed to address these gaps by exploring whether a locally grounded, CPoP-based TPL model can be designed and implemented in Indonesian primary schools. This approach drew on the principles of critical pedagogy, emphasising collaboration, reflection,and active engagement with local communities and environments. Aligning TPL with CPoPmay offer a model that supports the development of teachers' pedagogical skills while enhancing their capacity to foster CCT in students. This research, therefore, sought to contribute to addressing the shortcomings of traditional TPL models by exploring a potentially more sustainable and contextually relevant alternative.

The following questions helped to guide my examination of the literature:

- How does teacher professional development (TPD) differ from TPL?
- Why is TPL important?

- What model/s of TPL best support change in teachers' pedagogical practices? (Rani etal., 2023; Stewart, 2014)
- Are these models relevant to diverse Indonesian contexts?
- How do TPL research outcomes support my research design decisions?

2.2.1 Teacher professional development and teacher professional learning

The terms Teacher Professional Learning (TPL) and Teacher Professional Development (TPD) are often used interchangeably in the literature. Still, there are important distinctions between them that are relevant to my study. While both TPD and TPL aim to enhance teachers' skills and effectiveness, TPL is increasingly recognised as a more nuanced andtransformative process beyond traditional TPD. Researchers have used these terms differently to highlight the evolving nature of teacher-learning practices.

Some scholars view TPL as the embodiment of effective TPD, where professional learning is structured in a way that leads to fundamental modifications in teachers' practices, attitudes, and beliefs (Darling-Hammond & Hyler, 2017; Sims et al., 2023). Others consider TPL a form of transformational TPD, emphasising that TPL involves skill acquisition and a deeper transformation in a teacher's pedagogical and content knowledge (Martens & Salewski, 2009; Stahl, 2012). There is also a perspective that equates TPL with continuing professional development, indicating that it should be an ongoing process that supports continuous improvement rather than a one-time event (Abakah, 2023; Cordingley et al., 2015; Kennedy, 2014a). Furthermore, some researchers blend the concepts, referring to TPL and TPD, together to highlight their interconnectedness in the development of teaching practices (Fullan & Hargreaves, 2016; Rahman, 2022; Timperley, 2008).

For the purposes of my thesis, I adopt the definition of TPL as described by Darling- Hammond and Hyler (2017), who argue that effective TPD is systematic professional learning that leads to fundamental transformations in teachers' practices, attitudes and beliefs. This kind of professional development leads to effective TPL and, consequently, is believed to improve student outcomes. Stahl (2012) claims that structured TPL has the potential to be transformative TPD as the teacher learns and therefore grows in pedagogical and content capability, and so is changed (transformed) because of, and through, the education experience. In other words, what teachers learn from their structured participationin professional development should be applied in their teaching context (Nolan & Molla, 2021; Stahl, 2012). Essentially, it has to be a continuing process (Farrugia, 2021; Timperley,2008).

Despite the differences in terminology, studies frequently challenge traditional or conventional professional development as insufficient to meet teachers' needs for continuing education that is needed with ongoing developments in education (Desimone & Garet, 2015;Fraser et al., 2007; Parise & Spillane, 2010; Reeves, 2010). TPL or TPD is recognised as needing a continuous

process directed at concerns with the students' outcomes and teachers' needs, involving active learning experiences and reflection (Darling-Hammond & Hyler, 2017; Easton, 2008b; Forde & McMahon, 2019; Groundwater-Smith & Mockler, 2009;Labone & Long, 2016; Moon, 1999; OECD, 2019; Opfer & Pedder, 2011; Paramita, 2020).

In the context of the present study, the term *teacher professional learning* was preferred to characterise the phenomenon under investigation. This term has been deemed as the elemental and comprehensive description of the process of learning that takes place within aprofessional setting (Darling-Hammond et al., 2009; Easton, 2008b). Using this terminology, I highlight the notion that the learning process is an ongoing progression that impacts teachers, students and schools (Desimone & Garet, 2015; Parise & Spillane, 2010). This active engagement by the teacher positions the teacher as an agent of change (Easton, 2008a). I note the term *professional development* is considered outdated and too much of a catchall phrase by some (Van Schalkwyk et al., 2015), and the word *development* can be seen to imply that someone does something to others. Teachers, I argue, need more than development. They need to be able to expand their knowledge, competencies and attitudes to meet current and emerging education requirements (Easton, 2008b; O'Brien & Jones, 2014). By using teacher professional learning, I provoke a response by the teachers, which motivates them to reflect and evaluate their pedagogical practices.

2.2.2 Foundations of teacher professional learning

This section presents the literature related to the changing pedagogical practices of teachers and their roles as adult learners and agents of change.

2.2.2.1 Changing teacher pedagogical practice

Educational standards are continually evolving to meet the demands of the C21 and require reform in education. Teachers are increasingly recognised as pivotal agents of change, tasked with implementing reforms and driving improvements in student outcomes (Opfer & Pedder, 2011). Changing teacher pedagogical practice is crucial for aligning teaching methods with evolving educational standards, ensuring learners develop the necessary skillsfor modern global contexts (Darling-Hammond et al., 2017). In this context, teachers becomelearners themselves, responding to the demands of the evolving educational landscape. They change their pedagogical practices through various means, often facilitated by effectiveTPL programs. However, while much of the literature emphasises the importance of adapting new teaching methods (Sterten et al., 2016; Todorovic, 2020), there is limited critical analysis of how these approaches perform in diverse educational systems like Indonesia's. In a system where teachers often operate under hierarchical and rigid structures, the adoption of new strategies is frequently impeded by structural and cultural barriers (Bjork, 2013; Supriatna, 2011). Guskey (2002) argues that professional learning should

emphasise on enhancing teachers' knowledge and skills, with changes in teachers' attitudes and beliefs, which can lead to changes in student outcomes (see Figure 2.1). He contends that TPL programs should directly impact classroom practices and that when teachers see tangible enhancement in student learning as a result of their new methods, they are more likely to embrace and sustain these changes. Thus, professional learning becomes a critical lever for enabling teachers to adopt and refine innovative practices, ultimately leading to improved educational outcomes. This raises a critical question for the Indonesian context: how can TPL be restructured to offer more sustained, context-sensitive learning opportunities that empower teachers as active learners and change agents?

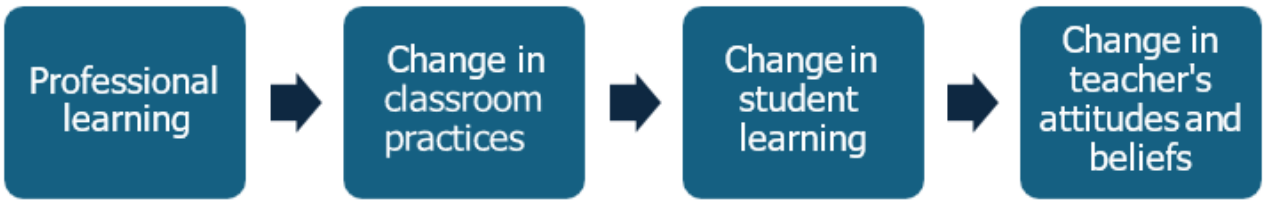

Figure 2.1 Guskey's Model of Teacher Change (Guskey, 2002, p.383)

Hall and Hord (2006) emphasise understanding and addressing teachers' specific concerns and needs at different stages of implementing innovation in TPL. By identifying where teachers are in their professional development journey, tailored support can be provided to help them overcome challenges and adopt new practices more effectively. Education change theorists (Darling-Hammond, et.al., 2017; Fullan & Hargreaves, 2016; Guskey 2002;Hall & Hord, 2006; Timperley et al., 2008) argue for the necessity of structured, responsive and supportive professional learning that empowers teachers to lead reforms and improve student outcomes. They propose that teachers, when equipped with the right tools and support, can drive substantial and sustainable educational reforms and ensure that educational innovations are effectively implemented and sustained, potentially cultivating a culture of perpetual improvement and innovation in schools.

Several case studies provide concrete evidence of the positive outcomes of professional learning that lead to changing teacher pedagogical practices. For example, Germuth (2018) conducted a study in North Carolina for teachers of primary and secondary schools who were involved in TPL. Germuth presents a model for effective TPL that positively impacts students by changing teachers' practices and mindsets. Another study on changing teacher pedagogical practices was conducted by Muir et al. (2021), introducing adaptations to focus on personalising students' learning in mathematics. In this case, shared responsibility amongteachers and the purposeful use of student data was central to reshaping pedagogical approaches. Teachers collaborated to interpret student data and adjust their instructional strategies to better meet individual student needs. This data-driven approach encouraged teachers to shift from one-size-fits-all teaching methods to more targeted, responsive practices. The findings highlight how collective responsibility and intentional purposeful of student data can foster significance professional growth for teachers and enhance

studentlearning outcomes.

Notwithstanding these positive findings, changing teacher practices remains fraught with challenges. Resistance to change, lack of adequate resources and insufficient time for TPL are common barriers identified in the literature (Guskey, 2002; Fullan, 2007). Additionally, the alignment between professional learning programs and classroom realities often poses a substantial obstacle, as noted by Avalos (2011). Ensuring that TPL is relevant and directly applicable to teachers' daily practices is crucial for overcoming these barriers.

In relation to my study, the previous research findings imply the need to have a TPL model that can be tailored to the particular requirements and contexts of Indonesian teachers. Understanding the local educational landscape and teachers' unique challenges is crucial fordesigning effective TPL programs. Identifying and addressing the barriers to changing teacher practices in the Indonesian context was critical to my research. This included exploring strategies to overcome resistance to change, resource constraints, and alignment issues between TPL programs and classroom practices, as these can impact student outcomes. Emphasising the importance of sustained and collaborative TPL in my research can help identify best practices for cultivating a culture of continuous enhancement among teachers. The next sub-section will explore teachers as adult learners, which are crucial in designingeffective TPL programs.

2.2.2.2 Teachers as adult learners

Adopting the mantle of lifelong learners, Chapter 1 introduced the idea that teachers must engage in continuous learning to maintain relevance and effective in their practice, meet the diverse needs of their students and inspire those they educate with an authentic commitmentto the pursuit of knowledge (McDonough, 2013). Teacher learning is a evolving and career- long process influenced by personal, social and cultural factors. As my research focused on teachers as adult learners participating in adult learning programs, it was crucial to design the TPL program in a way that is suitable and has a positive impact on both the teachers andtheir students. Literature suggests that there is a distinctive nature to adult education (Knowles et al., 2014; Kolb & Kolb, 2009; Lewis & Bryan, 2021; Merriam et al., 2007; Mezirow, 1997; Sandlin, 2005; Tare et al., 2021). Knowles (1980, pp. 43-44) describes a set of key principles of adult learning, or andragogy:

- Self-concept is when the adult learners move from dependence upon their instructor to becoming a self-directed learner.
- Adult education recognises that adult learners have a plethora of *experiences* of their lives, and they show their readiness to learn and recognise the need or reason to learn something.
- Adult learners should also realise their *orientation to learning,* whether they can usethe knowledge they will gain, and whether it is *relevant* to their needs.

- M*otivation,* whether external or internal, will influence the success of the learningprocess.

Rogers and Horrocks (2010) point out that adult learners are best treated as self-directed learners who assume accountability for their own learning, as this helps to develop their motivation in learning. Self-directed learning is “a process in which individuals take the initiative without the help of others in planning, carrying out and evaluating their own learningexperiences” (Knowles, 1975, p.18). Relevant to my research, Rogers and Horrocks (2010) suggest that providing adult learners with a rich mix of learning opportunities that engage them with problem-centred rather than content-oriented problems give opportunity to develop critical thinking and problem-solving skills. In line with this, it is recognised that teachers display motivation to join TPL for various reasons, including their personal drive for self-improvement, professional demands, and social pressures such as expectations from leaders or communities, peer influence they face in their teaching contexts (Fidishun, 2012; Knowles et al., 2014).

Dealing with adult learning requires overcoming situational, institutional, dispositional and academic barriers due to the distinct requirements of adult learners (Baharudin et al., 2013). Situational barriers are conditions that prevent adult learners from accessing and pursuing learning opportunities, such as a personal current life situation, time constraints, financial issues, family responsibilities, and lack of transportation. Institutional barriers are related to the policies, practices and conditions within educational institutions or systems that make access to learning difficult. These include inconvenient class schedules, complex registration processes, lack of relevant courses or insufficient support services. Dispositional obstacles denote internal factors that can hinder an individual’s learning process, such as their attitudes, perceptions and self-beliefs. These may include low self-esteem, lack of confidence, negative past experiences with education, or the belief that education is not valuable or relevant to their current life.

On the other hand, academic barriers are related to the skills and competencies required for effective learning, including prior educational experiences and literacy levels. For instance, a teacher who has not engaged in formal education for many years may face academic barriers such as unfamiliarity with recent academic writing styles or new educational technologies. They might also feel overwhelmed by the academic rigour of advanced courses or struggle with specific content areas that are necessary for their professionallearning. (Baharudin et al., 2013; MacKeracher et al., 2006; Morris et al., 2022).

In summary, it is crucial for the provider of TPL to ensure the learning supports the teachers as adult learners as to how it will impact their students, considering that adult learners face more complex problems and contexts that might influence their learning process. Facilitators of TPL applying adult learning principles should also consider the past experiences of the learners and acknowledge them before introducing new experiences, as adult learners bring their prior knowledge and experiences to the learning program (Howard et al., 2018). It is, therefore,

important to connect perspectives on the skills, knowledge and understanding forming the TPL to their prior knowledge and experiences in school (Rogers & Horrocks, 2010). This helps teachers to appreciate their skills, knowledge and understanding accumulated from teaching experience and academic prior knowledge, as not all teachers recognise the value of their prior knowledge or their self-concept as learners (Tare et al., 2021).

Governments can produce policy, but policy will have little impact unless teachers see themselves as the implementers of these policies, as the change agents (Gardinier, 2012; Hinnant-Crawford, 2016). Without high-quality teacher learning and teachers acting on their learning, there will be limited enhancements in student learning (Darling-Hammond & Hyler, 2017; Desimone et al., 2002). Therefore, it is critical to invest in quality learning opportunitiesfor teachers. However, research on TPL in Indonesia suggests that current approaches to supporting teachers' learning fail to meet the government's agenda of improved outcomes for students learning (Revina, 2020; Tias & Tongjean, 2022). Thus, providing more effective TPL is critical for the educational process. I contend that TPL learning design should reflect adult learning theory to enable participants to engage in adult learning.

2.2.2.3 Teachers as agents of change

Teaching and learning are fundamentally entwined within the teaching profession. Extensive research highlights that when teachers engage in high-quality, context-specific professional learning, they have a positive influence on students' performance. When teachers develop their knowledge, attitudes and competencies, their students' competencies, knowledge and attitudes are also impacted (Darling-Hammond & Hyler, 2017; OECD, 2014); Sparks et al. (2000). Fullan et al. (1991) stated many years ago that "educational change is dependent on what teachers do and think. It is as simple and complex as that" (p.117). Looking at the current demand for C21 skills, it is recognised that many teachers must strengthen their pedagogical knowledge of teaching practices, create and observe advancements in their discipline and communicate these proficiently to their students or communities to meet the need to teach C21 skills, like CCT (Gümüş, 2022). Therefore, engaging in TPL is vital for educators to provide a function as an active agent of change within the school system (Bye,2017; Parise & Spillane, 2010).

An agent of change is an individual or group that actively leads efforts to transform behaviours, practices or structures within an organisation (Badley, 1986; Brown et al., 2023;Fullan, 2011). For teachers, this role involves engaging in and driving change within the classroom and broader educational system (Brown et al., 2021; Fullan, 1993). Teachers act as agents of change when they leverage their professional agency – exercising authority, freedom and responsibility to make decisions that serve the best interests of their students and their learning (van der Heijden et al., 2015). Key traits of a teacher as an agent of change include mastery of pedagogy, collaboration, innovation and a commitment to lifelonglearning (van der Heijden et al., 2018).

Supporting teachers in becoming effective agents of change requires consistent and tailored measures, including educational policies, professional development and resource allocation. Factors such as cultural values and infrastructure challenges also play a key role. As discussed in Chapter 1, Indonesia's *Merdeka* curriculum empowers teachers to design context-specific learning, providing the flexibility needed to enact change. With the right TPLsupport, teachers can fully embrace their role as change agents.

2.2.3 Transformative learning

Teachers are the central figures in the process of implementing educational policy into the curriculum. They are the essential drivers and facilitators of change, requiring them to be actively engaged and dynamic in the change process. In Chapter 1, I suggested that for Indonesian teachers to be able to bring the PPP to life, particularly with regard to teaching CCT, transformative learning is required in "the process of effecting change in the structures of assumptions, perceptions, cognition, and feelings" of the teachers (Mezirow, 2003, p. 58). Transformative learning relies heavily on teachers' life experiences rather than simply adding information (Merriam, 2017). These experiences help shift beliefs, attitudes, or perspectives, essential for facilitating transformative learning experiences that foster the development of CCT in students. How do the teachers show their creativity in restructuring their understanding of the new information during the process? This could be achieved by teachers as learners questioning their current and prior assumptions and then criticallyreflecting on their learning experiences.

Taylor and Cranton (2012) emphasise that transformative learning involves a deep shift in thoughts, feelings and actions, which is crucial for teachers to reassess their philosophies and methods to foster CCT effectively. Brookfield (2017) supports this, finding that teacherswho participate in reflective practices are more likely to adopt innovative strategies for CCT. Collaborative learning environments are also key to transformative learning. According to Mezirow (2018), peer dialogue allows individuals to test and validate new perspectives. Further studies by Taylor and Cranton (2012), Niemi (2015) and Blundell (2017) show that professional learning communities or inquiry groups increase the likelihood of transformative learning by fostering collaboration, reflective dialogue, and shared problem-solving among teachers. These communities provide a supportive environment where educators can critically examine their beliefs and practices, learn from each other's experiences, and apply new insights in their teaching, leading to more profound, sustained changes in their pedagogical approaches.

In Indonesia, transformative learning must be culturally responsive to be effective, addressing the specific social and cultural contexts that shape teaching practices. Professional learning should integrate local knowledge and involve teachers in co- constructing learning experiences, empowering them to apply new ideas in ways that are meaningful to their local teaching contexts (Gay, 2013; Ntseane, 2011).

In summary, transformative learning is a critical component of TPL, particularly in the contextof implementing CCT through CPoP in Indonesian primary schools. By fostering deep, reflective and collaborative learning experiences, transformative learning helps teachers to critically evaluate and revise their assumptions, develop a stronger professional identity and effectively implement curricular changes. It enhances teachers' pedagogical skills and contributes to creating a more engaging and responsive educational environment for students.

2.2.4 Teacher professional learning in the Indonesian context

In the context of Indonesia, TPL refers to TPD (Kusanagi, 2022; Revina et al., 2020; Sutomo& Siregar, 2022; Tanang, 2014), teacher training (Bjork, 2013; Yarrow et al., 2022), teacher professionalism training (Lestari & Hermanto, 2022) and TPLD (Rahman, 2022). All of these concepts refer to continuous efforts aimed at enhancing teachers' skills, competencies, and knowledge. Given the diverse culture, vast geography and variations in regional development levels, the history of professional learning for teachers in Indonesia has faced unique challenges and opportunities. Key issues include the inconsistent quality of TPL programs, a lack of follow-up support and limited access to resources, especially in rural areas (Revina et al., 2020; Supriatna, 2011). These challenges result in fragmented professional development, where policy initiatives often fail to translate into effective implementation at the local level. Additionally, limited funding for schools and teachers restricts their ability to access high-quality TPL, hindering the improvement of educationaloutcomes (Sari et al., 2012).

Revina (2020) further elucidates a comprehensive overview of four decades of TPL initiatives from the 1980s to the 2020s, highlighting periods of progress and regression. Despite policy advances, there are significant gaps in the implementation of TPL programs,with many initiatives failing to reach all teachers or achieve desired outcomes. Disparities inTPL access and quality persist, particularly affecting teachers in remote and disadvantagedareas and ensuring the sustainability of TPL initiatives remains a critical challenge, with many programs relying on short-term funding and external support. She argues for greater policy coherence and alignment between national, regional and local levels to ensure the effectiveness of TPL programs. There is a need for a more holistic approach to TPL that integrates initial teacher education, ongoing professional learning and career-long learning. Empowering teachers to assume responsibility for their professional learning is essential forthe success of TPL initiatives.

Both Supriatna's (2011) and Revina's (2020) work show significant gaps between policy and practice, which continue to impede the realisation of TPL's full potential in improving teaching standards and student outcomes. Their critical analysis highlights the need for more effective implementation strategies, better resource allocation and greater equity in access to professional learning opportunities. Addressing these issues is essential for the continued improvement of teacher quality and, ultimately, the educational outcomes for students across Indonesia. Many

initiatives fail to result in sustained improvements in teaching quality, particularly in remote and disadvantaged areas.

Recent studies provide insights into both advancements and ongoing challenges in TPL, highlighting critical issues relevant to my study in implementing effective TPL that applies CPoP to foster CCT (Aisyah et al., 2023; Rahman, 2021; Tias & Togjean, 2022). Rahman (2021) discusses the paradox of high participation rates in TPL programs yielding a relatively low impact on teaching practices and student learning performance. In Indonesia, the high participation of teachers in TPL might be due to personal and political affiliation with the authorities managing TPL (Rahman, 2019). This highlights a critical issue: the focus on increasing participation rates often comes at the expense of program quality and relevance.

Rahman (2019) advocates for more targeted and context-specific TPL that directly addresses the practical needs of teachers, suggesting that a shift from quantity to quality is essential for meaningful improvements. Further, Asiyah et al. (2021) and Tias and Tongjean(2022) underline the importance of moving beyond traditional TPL models by emphasising innovation and benchmarking against international standards. While Asiyah et al. (2021) highlight the pivotal role that well-supported TPL plays in enhancing teacher commitment and fostering professional growth, Tias and Tongjean (2022) argue that adopting global bestpractices can help raise the quality of TPL in Indonesia. Together, these perspectives suggest that effective TPL must be innovative and informed by other best practices to drive meaningful improvements in teaching quality.

However, as Revina et al. (2023) cautioned, such improvements will only be sustainable ifoutdated TPL models are replaced by systemic reforms integrating policy changes with practical, context-specific interventions. This aligns with Loeneto et al.'s (2022) call for future-oriented TPL that equips teachers with the skills necessary for C21 education, including digital literacy and modern pedagogical techniques. Both studies stress the needfor continuous adaptation and innovation in TPL programs, such as integrating hands-on digital tool training, fostering critical thinking, and promoting collaborative learning strategies,ensuring that teachers are not only able to meet current educational challenges but also prepared for evolving demands. Silvhiany (2022) adds a critical dimension to this discussion,focusing on the post-pandemic era, where the limitations of traditional TPL were exposed. She argues that flexible, technology-enhanced professional development is now essential tomeet teachers' diverse and shifting needs. The pandemic has highlighted the importance of adaptable TPL models that cater to immediate and future challenges, reinforcing the broadercall for innovation and sustainability in TPL reform across Indonesian schools.

Creating effective TPL in Indonesia faces several issues and challenges, many common to education systems worldwide (Darling-Hammond et al., 2017; Kuncahya & Basikin, 2019). The Indonesian Government has shown a commitment to improving the skills and knowledge of its educators through ongoing policy updates (Lim et al., 2014; Tanang, 2014).For instance, in 2018,

Indonesia faced a significant need for nearly a million new teachers, prompting the Ministry of Education and Culture to gradually recruit 100,000 qualified teachers for public schools (Loeneto et al., 2020). This teacher shortage, coupled with the demand to enhance the quality of in-service teachers, supports the need for effective TPL. High-quality TPL is essential not only to equip newly recruited teachers with the required skills but also to ensure that in-service teachers continuously improve to meet the demands of the national education policy. The most recent policy of the Minister of Education and Culture is the Teacher Mover or *Guru Penggerak* program (Kemendikbud, 2020b). It was first introduced in 2020, and the purpose of the program is to support the teacher in becoming a leader in learning and to position the students at the core of learning (Muthiah, 2021). Specifically, the teachers through the program "understand and implement the *Merdeka*, or emancipated curriculum, as a new curriculum that will be implemented comprehensively by 2024 in all levels of education" (Riyan Rizaldi & Fatimah, 2022, p. 262). While the *Merdeka* curriculum is available to all educators, *Guru Penggerak* teachers are expected to guide their peers in implementing it effectively, offering mentorship and practicalinsights to ensure a deeper understanding of its principles and successful adaptation to localcontexts. *Guru Penggerak* targeted 20% of educators as teacher leaders or agents of change who could transform, collaborate, and share the *Merdeka* curriculum with fellow teachers. The *Guru Penggerak* is targeted to be completed in 2024 (Kemendikbud, 2022).

The impacts of the program are anticipated to be the enhancement of teacher quality and the quality of Indonesian students and educational institutions (Satriawan et al., 2021). The program was created to be undertaken for six months in the form of online training, workshops, conferences and learning assistance: the mentorship and support provided to teachers as they go through the program, ensuring that they receive both one-on-one and collaborative group support to help them implement what they have learned (Kemendikbud,2022).

The *Guru Penggerak* program, primarily delivered online, poses difficulties for teachers in remote areas with limited internet access (Sholeh et al., 2023). Another issue that arises causing disappointment and inequality among teachers, is the limited opportunities provided by the *Guru Penggerak* program, which restricts participation to teachers under 50 years old.Critics argue that senior teachers still need to improve their pedagogical quality to meet educational expectations (Hamidah, 2020; Wicaksono, 2022). Though I could not find explicit reasons behind the government's age policy, it may be related to concerns about teacher adaptability. Research has suggested that older teachers with more extended professional experience can be more resistant to change and less flexible in adapting their curriculum design and pedagogy (Tůmová, 2012). This resistance to change could potentially influence policies favouring younger or mid-career teachers who may be more open to adopting new teaching methods and curricula. Excluding older teachers creates a divide between those knowledgeable about the new curriculum and those who are not (Koesoema, 2023). This policy can contribute to feelings of marginalisation and decreased morale

among older educators, who may feel undervalued despite their years of service and expertise. To bridge this gap, it is essential to develop professional learning programs that cater to teachers of all ages, ensuring that both novice and veteran educators have the opportunity to enhance their skills and stay current with educational advancements (Iqbal & Ali, 2024). These factors playa vital role in determining the accessibility and quality of TPL for educators across different locations.

The Indonesian government has exhibited a commitment to enhancing teacher quality through ongoing policy updates, and introducing the Guru Penggerak program is a positive step toward fostering teacher leadership and collaboration (Muthiah, 2021). Additionally, the focus on future-oriented TPL has brought digital literacy and modern pedagogical techniques to the forefront, ensuring teachers are equipped for 21st-century education (Loeneto et al., 2022). Post-pandemic, there has been a significant shift toward flexible, technology- enhanced professional learning, which is crucial for meeting the diverse needs of teachers (Silvhiany, 2022). These advancements represent meaningful progress toward a more innovative and effective TPL system in Indonesia.

Despite numerous reforms and initiatives, significant gaps persist in the landscape of TPL in Indonesia, impacting educational outcomes. These gaps can be broadly categorised into issues related to quality and relevance, accessibility and equity, implementation and sustainability, and policy coherence and integration. Reflecting on the findings from previous research that highlight gaps between policy and practices, it becomes evident that there is apressing need for more effective implementation strategies that bridge this divide. During mystudy, the *Merdeka* curriculum was still a prototype, and the *Guru Penggerak* program gave limited opportunities for teachers to join, as not all teachers could participate (Bahri, 2022). Thus, a need to address the quality and relevance of TPL programs, adopt an integrated approach to teacher development, ensure sustainability and local adaptation, adapt best practices and promote innovative pedagogies are essential strategies. These implications were considered in my study to contribute to a more effective and sustainable implementation of CPoP, providing support with equal opportunities and enhancing the capacity of teachers to foster CCT among their students.

2.2.5 The current trends of teacher professional learning in Indonesianprimary schools

As explained in the previous section regarding TPL in the Indonesian context, there are improvements and challenges in implementing effective professional learning for teachers. Empirical research regarding TPL, specifically in the primary school context, shows similar trends (Revina et al., 2023; Putri & Ilma, 2011; Amzat et al., 2022). Professional learning for primary school teachers in Indonesia has been a central focus of educational reforms for several decades. The government has implemented several initiatives, including the teacherworking group *Musyawarah Guru Mata Pelajaran*, in-service training *Pendidikan dan Latihan Profesi Guru*, *Pengembangan Keprofesian Berkelanjutan* program, or continuing professional development

through a cascade model (Revina et al., 2023). Other educators have developed subject-focused training and localised delivery in areas such as traditional song composition conducted by Julia et al. (2023), the impact of instructional and distributedleadership on TPL (Amzat et al., 2022), and the lesson study and realistic mathematics education approach (Putri & Ilma, 2011). Each program is designed to enhance instructors' pedagogical abilities and general professional competence and has demonstrated favourable results in improving teacher collaboration, subject-specific knowledge, and classroom practices, ultimately leading to better student learning outcomes.

Despite numerous initiatives and program success, significant challenges remain ineffective in enhancing teacher quality. These include insufficient instructor capacity, poorly designed training modules and inadequate duration, which collectively undermine the program's impact on improving teaching (Nasution, 2020). The failure to embed TPL within broader school improvement initiatives means that TPL efforts frequently do not translate into sustained enhancements in teaching practices. Additionally, a lack of further assistance andmentoring for teachers after initial training sessions often results in limited application of newstrategies and methodologies in the classroom (Putri & Ilma, 2011). Moreover, the centralised nature of many professional learning programs can lead to a one-size-fits-all approach that does not address the distinct requirements and contexts of individual schools and teachers (Julia et al., 2023; Supriatna, 2011). To be more effective, TPL programs must be context-specific, tailoring their content and approach to the unique geographic, cultural, and educational needs of different regions and schools (Ahmad, 2023; Robertson et al., 2018). This includes considering local resources, teacher experience levels, and community priorities to guarantee that professional learning is relevant and actionable for teachers in their specific teaching environments.

Furthermore, there is often a lack of collaborative and reflective practices within TPL programs. Effective professional learning necessitates chances for teachers to collaborate,share experiences and reflect on their practice. However, many programs focus more on delivering content than fostering a community of practice (CoP) where teachers can learn from each other and engage in continuous professional growth (Amzat et al., 2022). In addition, the sustainability of TPL initiatives is often a concern. Many programs depend on external funding or temporary grants, which can lead to discontinuity when funding ceases(Nasution, 2020). Ensuring sustainable funding and institutional support for ongoing professional learning is crucial for the long-term improvement of teacher quality (Revina et al., 2023).

In conclusion, while there have been significant efforts and some successes in enhancing TPL in Indonesian primary schools, addressing these challenges is crucial to realise the fullpotential of TPL programs. Effective professional learning should be context-specific, collaborative, continuously supported, properly evaluated and sustainably funded to truly influence of pedagogical methods on student achievement (Amzat et al., 2022; Julia et al., 2023; Putri & Ilma,

2011; Revina et al., 2023).

2.2.6 Community of practice

A CoP is a group of individuals who share a common interest or profession and engage incollective learning through regular interaction (Wenger, 1998; Wenger-Trayner & Wenger-Trayner, 2015).

A CoP is characterised by mutual engagement, joint enterprise, and a shared repertoire of practices, tools, and experiences. It offers a structure for understanding how knowledge is created, shared, and sustained within a community and has been widely adopted in educational settings to promote professional learning and development. In the context of TPL and my study in the Indonesian context, CoP was chosen because it facilitates continuous, collaborative, and context-specific professional development, enabling teachersto exchange knowledge and improve their practice collectively.

Empirical studies have demonstrated the effectiveness of a CoP in various educational contexts, highlighting its role in fostering collaborative learning, professional growth and improved teaching practices (Cojorn & Sonsupap, 2024; Lovemore et al., 2022). Research by Vescio et al. (2008) identified several critical factors for successful CoP establishment, including strong leadership support, a clear vision and purpose, adequate time for collaboration and opportunities for reflective practice. When these elements were present, CoPs were more likely to thrive and produce positive outcomes for teachers and students. Similarly, Curwood (2014) found that trust and open communication within the community allowed teachers to share experiences and challenges freely, facilitating innovative teaching practices and enhancing teachers' confidence and competence. CoPs also contribute to the development of teachers' professional identities. As Niesz (2010) and Mercieca (2018) argue, by aligning personal values with professional practices, a CoP enhances teachers' motivation and commitment, making them more adaptable to evolving challenges. This adaptability is further strengthened by the continuous, collaborative learning that CoPs promote (Thornton & Cherrington, 2013), which Lieberman and Pointer Mace (2010) suggestis key to ensuring teachers stay current with pedagogical developments.

Despite their benefits, implementing a CoP presents several challenges. Doppenberg et al. (2012) identify the difficulty of sustaining participation over time due to teachers' time constraints and competing professional demands, highlighting the need for institutional support and adequate resources. Further, Powell (2012) highlights the importance of fostering interdependence among members, maintaining authenticity, and establishing a future trajectory in CoP. Wenger-Trayner and Wenger-Trayner (2015) emphasise the criticalrole of skilled facilitators in guiding discussions, managing conflicts and maintaining the community's focus, which helps ensure CoPs continue to meet their members' needs. CoPsprovide a valuable platform for educators to share knowledge, develop new teaching practices and support each other in their professional journeys. The benefits

of a CoP, suchas improved collaboration, continuous professional development and strengthened professional identity, are well-documented and align with the goals of effective TPL.

In the Indonesian context, where traditional models of TPL often fall short in addressing teachers' diverse and dynamic needs, CoPs offer a promising alternative. The collaborative nature of a CoP aligns well with the Indonesian cultural emphasis on community and collective responsibility (Wulandhari et al., 2020). By fostering a sense of shared purpose and mutual support, CoPs can help Indonesian teachers navigate the challenges of educational reform and improve their pedagogical practices. However, the challenges associated with sustaining a CoP, such as avoiding a lack of effort or engagement among members and ensuring effective facilitation, must be carefully addressed. Schools and educational institutions in Indonesia should provide the necessary support, including time, resources and skilled facilitators, to maximise the effectiveness of CoPs. Encouraging a culture of openness and critical reflection within a CoP can also help to mitigate some of the challenges associated with these communities.

In conclusion, CoPs represent a powerful model for fostering professional learning and collaboration among teachers. The empirical research reviewed in this section underscoresthe importance of CoPs in supporting continuous professional development, enhancing teaching practices and building a robust of professional identity. By addressing the challenges and leveraging the benefits of CoPs, educational institutions in Indonesia can create supportive environments that promote ongoing learning and improvement for teachers and students alike.

2.3 Critical pedagogy of place

This section reviews CPoP and its suitability in the Indonesian context. It begins with anoverview of CPoP, exploring its theoretical foundations and principles, followed by a discussion of how these principles can be integrated into Indonesia's unique educationallandscape

2.3.1 A review of critical pedagogy of place

CPoP is an educational approach that builds upon the tenets of critical pedagogy to highlightthe significance of linking education with the nearby surroundings and community. This approach is closely linked to the work of Paulo Freire, Henry Giroux and Peter McLaren (Gruenewald, 2003a). Freire is famous for his influential theories on critical pedagogy and education for liberation (Freire, 1974). He is known for his seminal book *Pedagogy of the oppressed* (1970), which laid the foundation for critical pedagogy. His pedagogical approachprioritised dialogue, reflection and conscientisation (critical consciousness) to enhance the learning process. Giroux is an important figure in critical pedagogy and education for emancipation from oppression (Giroux, 2004). His ideas are founded on the belief that education should not be a one-sided transfer of knowledge from teacher to student but rather an interactive process that promotes discussion, inquiry and

analysis of power structures in society. McLaren is a critical pedagogy scholar focused on issues of class struggle, multiculturalism and critical theory (Freire, 1974; Giroux, 2004; McLaren, 2016; McLaren & Kincheloe, 2007; Sudibyo, 2018). His ideas on pedagogy call upon teachers to be moral and ethical agents in a struggle against social oppression (McLaren, 2015).

Critical pedagogy is a set of education principles and practices that closely align with critical thinking (Rahimi & Sajed, 2014). Pedagogy of Place and PBE extend the above ideas on critical pedagogy, emphasising the significance of the local environment, culture and community in education. Pedagogy of place recognises that education is not isolated from the world in which it occurs (Renshaw & Tooth, 2017). Instead, education should integrate local knowledge, histories and issues into the curriculum, enhancing the contextual relevance and engagement of learning for students (Gruenewald, 2003a; Perveen, 2015; Ajaps & Mbah, 2022). The pedagogy of place seeks to cultivate a feeling of contextual belonging, identity, and responsibility by linking education to the lived experiences of students and their communities (Gruenewald & Smith, 2014; Kelley & Pelech, 2019). PBE, while similar, connects real-life, meaningful learning to classroom activities as there is so much to learn from the places a person inhabits (Altun Yalçin et al., 2017; Gruenewald & Smith, 2014; Sobel, 2004). How to utilise local resources in the educational process and encourage students to physically leave the classroom to explore their surroundings. Educators should consider the impacts on learners of places they experience as every placeor context is going to be part of the learners' development (Gruenewald, 2001).

Moreover, it is important for teachers to allow a space for students' voices as it shows their understanding of who they are in the context of where they are (Hodson, 2011). PBE sees that local heritage and culture are elements that influence the learning process experienced by the students and should not be ignored as it is bound to the place physically and also become dominant in a community where the students live and learn (Gruenewald, 2003b; Orr, 2013; Yemini et al., 2023). According to Sobel (2004), PBE is "the process of using localcommunity and environment to teach concepts in subjects across the curriculum and helps the students develop their ties and appreciation to the natural world" (p.6).

The term *critical* married with place brings the innovative approach of CPoP introduced by Gruenewald (2001). Although PBE tends to focus on the ecological dimension of place and limits the attention to the social relationship (McVicar, 2021), it also shows how students see the places that are meaningful for them and decide what they are going to do with them. Greenwood (2008) considers place a potential grounded nexus that brings about the distinctiveness of cultural and geographical experiences in the diverse interconnections between mindscape, cultural group and landscape. Within the framework of CPoP, this implies that education should facilitate students' comprehension of the social, economic, and environmental challenges confronting their communities, thereby empowering them to take action to mitigate these issues.

Critical Pedagogy of Place (CPoP) integrates principles from critical pedagogy (Freire, 1970) and place-based education, the latter of which is deeply rooted in environmental education (Gruenewald, 2003a; Sobel, 2004; Stevenson, 2008). The idea of CPoP is to help individuals learn tounderstand their world through developing a critical consciousness, recognising the ways their sociocultural and historical reality shape their lives and selves, and realising that realityis a result of humans thinking and acting differently (Gruenewald, 2003a; Stevenson, 2008).Eco-justice education (Lowenstein et al., 2010; Martusewicz & Johnson, 2016), eco-critical pedagogy (Garrard, 2010; Lupinacci & Happel-Parkins, 2019), place-conscious pedagogy (Darron & Pelech, 2019; Kennedy et al., 2016), and place-conscious education (Golden, 2016; Greenwood & Hougham, 2015; Griffin, 2017) are all encompassed within CPoP. The concept of CPoP underlies a relationship or interconnection of PBE and critical pedagogy that is a contextualised and localised approach that considers the ecological, socio-cultural, politico-economic and psychological paradigm of these places in pedagogical decision- making (Morehouse, 2008). CPoP, as described by Gruenewald and inspired by the work ofcritical pedagogy and PBE, introduces the terms "reinhabitation and decolonization*"* (2003a, p. 9)*,* which refer to identifying, recovering and establishing material spaces and places thatteach us the art of living well within our surrounding and recognising and changing ways of thinking that harm and exploit other people and places. The CPoP highlights the natural history of a certain locale alongside its social and cultural history and the various meaning that a place has for students and teachers by embracing the voices of teachers and stakeholders, incorporating fieldwork and investigation with genuine artefacts and representations, and encouraging ecologically sustainable and culturally relevant standardsand pedagogy (Q. M. Cutts, 2012; Harasymchuk, 2015; Huffling et al., 2017; Zimmerman &Weible, 2017). Thus, CPoP encourages educators and students to engage with a diverse range of issues – urban, social, ecological, rural, local and global – while fostering a critical awareness of place. This approach promotes a shared dialogue about our collective concerns, making it valuable for exploring and understanding the deeper meanings behind these topics. Questions such as *what happened? what is happening now? what should happen here?* give opportunities for diverse responses within the same community and practices for appreciating different perspectives and cultural diversity (Greenwood, 2008; Iyer & Reese, 2013). Further, questions such as *what needs to be conserved, transformed, restored, or created here?* Strengthens the concept of reinhabitation and decolonization as the questions guide investigation and implementation among educators striving for social justice and ecological sustainability (Greenwood, 2008).

To effectively implement CPoP, teachers must extend its application beyond the traditional social, physical, and virtual spaces where daily realities often contradict conventional beliefs about place-conscious education. This approach should emphasise a gradual, thorough engagement with local natural environments, as such experiences help foster a deeper relationship to place and contribute to the improvement of global environmental awareness (Langran & DeWitt, 2020; Payne & Wattchow, 2009; Stevenson, 2008). Gruenewald (2003a)highlights the synergy between Place-

Based Education (PBE) and critical pedagogy, noting that focusing on lived experiences within specific places contextualises culture and illustratesthe interrelationship between culture and environment. This, in turn, offers a locally relevant pathway for multidisciplinary investigation and democratic engagement, providing students with the tools to critically participate with their surroundings while addressing broader social and ecological concerns (Gruenewald & Smith, 2014).

Existing literature on CPoP highlights its potential to create meaningful learning experiences by connecting students with their local communities and environments to build consciousness in addressing real-life issues (Bowers, 2008; Gruenewald, 2003a; Smith & Sobel, 2010). CPoP encourages students to acquire a comprehensive understanding of their surroundings and fosters a sense of responsibility and agency. By integrating local knowledge and community issues into the curriculum, CPoP aims to make learning relevant and transformative. However, there are limitations in the research outlined in the literature, including a lack of comprehensive models that integrate both CPoP and CCT systematically (Gruenewald & Smith, 2014; Stevenson, 2008), insufficient empirical studies demonstratingthe practical application and impact of CPoP in diverse educational contexts (Dimick, 2016;McInerney et al., 2011; Stevenson & Dillon, 2010), particularly in primary education, and limited frameworks that address both the pedagogical and community engagement aspectsnecessary for effective CPoP implementation (Gruenewald & Smith, 2014; Sobel, 2004).

Research regarding PBE or eco-friendly education in primary school has been conducted in Indonesia (Prabawani, 2017), but did not explore CCT. Moreover, in the Eastern cultural context, particularly in Indonesia, research on critical thinking in children's education remains limited (Hasan et al., 2013; Muliasari, 2016; Rahmah, 2015). Most studies have focused on critical thinking among students in secondary or tertiary education (Emilia, 2005; Indah, 2016; Junining, 2016; Palinussa, 2013; Pikkert & Foster, 1996; Utami et al., 2017). Further, research related to CPoP has not been conducted in Indonesian primary schools. This may be due to the relative novelty of CPoP as a pedagogical framework in Indonesia, where traditional education models still dominate, particularly in primary education. Additionally, theintegration of place-conscious education with CCT may face challenges in Indonesia’s national curriculum, which historically emphasises rote learning and subject-based competencies over interdisciplinary and critical approaches. The lack of emphasis on fostering CCT at the primary level could also contribute to the limited exploration of CPoP in this context.

2.3.2 Suitability of critical pedagogy of place to Indonesian teacher professional learning

CPoP is an approach suited to Indonesia's diverse context as it supports an individual’s awareness of their surroundings through their everyday life experiences. When integrated into Indonesian

TPL, CPoP aligns with the Indonesian value of unity in diversity (*Bhinneka Tunggal Ika*) as it encourages teachers to integrate local cultures, traditions and community issues into their teaching, fostering a sense of unity and respect for diversity (Gruenewald, 2003a; Smith & Sobel, 2010). Further, CPoP brings into line with the Indonesian values of social harmony and community engagement (*Gotong Royong),* as effective implementation of CPoP requires partnership with the community. Through TPL, teachers learn strategies toengage with community members, utilise local resources and create learning experiences that are grounded in the local context, thereby enhancing the relevance and impact of education (Sobel, 2004; Stevenson & Dillon, 2010). Within the context of TPL and my study in the Indonesian context, CoP was chosen because of its role in facilitating continuous, collaborative, and context-specific professional development, enabling teachers to exchange knowledge and improve their practice collectively. This collaborative nature aligns with decolonization principles, as highlighted by Mbah and Ezegwu (2024), who emphasise theimportance of participatory approaches and place-based education in promoting the inclusion of indigenous knowledge. By integrating these strategies within a CoP, educators can ensure that their professional learning advances their skills and contributes to transforming educational practices by embedding local cultural and environmental knowledge into teaching.

Taking a closer look into the Indonesian *Merdeka* or emancipated curriculum, CPoP facilitates the six dimensions of PPP, specifically for the first element in the sub-element of prioritising similarities and respecting differences, building empathy, understanding ecosystem connectedness, caring for the environment and exercising rights and obligationsas an Indonesian citizen (*Badan Standar Kurikulum, Asesmen Pendidikan* (BSKAP, 2022). By incorporating CPoP into TPL, teachers are able to connect their practices with the goalsof the *Merdeka* curriculum.

As previously discussed, the implementation of CPoP supports CCT by engaging learners with real-life problems and encouraging innovative solutions. Through TPL, teachers can design and implement lessons incorporating CPoP principles, thereby enhancing CCT in theclassroom by encouraging students to critically examine their surroundings, question established norms and collaborate on creative solutions to local challenges. For example, CPoP encourages learners to investigate environmental or social issues relevant to their community, fostering critical analysis, creative problem-solving, and reflective thinking. (Gruenewald & Smith, 2014; Kelley & Pelech, 2019; Stevenson, 2008). The *Kurikulum* 2013(K13) (curriculum 2013) themes naturally align with a CPoP approach and can be leveraged to support the new *Merdeka* curriculum. (further explanation in the following section). By integrating these themes into TPL, educators can create culturally and environmentally relevant learning experiences that reflect local contexts (McInerney et al., 2011; Schindel Dimick, 2016).

I argue that CPoP can contribute significantly to the success of the PPP if integrated into Indonesian TPL. This approach enriches the curriculum and ensures that education is deeply

rooted in local cultural and environmental contexts. It equips educators with the tools to foster CCT while honouring Indonesia's unique heritage, ultimately contributing to the realisation of the PPP's educational goals.

2.4 Primary education curriculum in Indonesia: Policies and national standards

The primary education curriculum in Indonesia serves as the foundation for young learners,shaping their academic and social development from an early age. My research focused onthe role of TPL in implementing CPoP among primary school teachers, aimed at enhancing CCT skills. By integrating CPoP within the primary education framework, this research sought to equip educators with strategies that foster dynamic, place-based learning, enriching the students' learning experiences.

The Indonesian education system mandates 12 years of compulsory education (*Wajar Dikdas*), spanning six years of primary school, three years of junior high school and three years of senior high school, with government facilitation and funding. According to the Ministry of Education and Culture (Kemendikbud, 2018), Indonesia has 148,244 primary schools serving over 25 million students. In public schools, teachers typically manage classes of 30 to 40 students, which would be challenging to implement new pedagogical strategies like CPoP (Asodike & Onyeike, 2016; Finn et al., 2003; Pedder, 2006; Sheppard,2006).

The curriculum framework across the *Kurikulum* 2013 (K13), the emergency curriculum, and the *Merdeka* curriculum are guided by national policies aimed at shaping young citizens withthe skills and values necessary for contributing to society. Each of these curricula, while differing in structure and focus, emphasises developing students' competencies to meet national educational goals. During my research, as COVID was still striking, schools were given the flexibility to implement the *Kurikulum* 2013 (K13), the emergency curriculum (a simplified version of K13 because of COVID) or the new *Merdeka* curriculum. The Ministry of Education and Culture presented the K13, which emphasised character education, thematic learning and the integration of subjects to produce well-rounded students (Michie, 2017; Yulianti, 2015). K13 promotes C21 competencies, such as critical thinking, creativity, and collaboration, with the aim of developing attitudes, knowledge, and skills that are aligned with national competency standards (Kemendikbud, 2018). Teachers are obligated to establish learning environments that engage students' thinking skills, integrate school and community contexts, and encourage both process- and product-oriented learning. The K13 mandates 30 to 36 learning hours per week for students (35 minutes per hour) in primary schools, with thematic learning designed to build from familiar, concrete themes – such as *myself* or *my family* – towards broader societal or environmental topics. This thematic approach seeks to enhance the significance of learning by connecting it to students' lived experiences and the world

around them. In 2020, the *Merdeka* (emancipated) curriculum was introduced, providing teachers greaterautonomy to design learning activities that suit their local contexts. The *Merdeka* curriculum aligns with the PPP, which outlines six core competencies: faith, global diversity, independence, collaboration, critical thinking and creativity (BSKAP, 2022; Shofa, 2021). The inclusion of CCT as key components aligns with C21 competencies and emphasises student engagement with real-life issues.

There seems to be a contradictory belief in putting CCT together with having faith, fearing God and having a noble character. Research shows that CCT is a freedom of thinking. In contrast, having faith, fearing God and having a noble character shows obedience to rules and norms (Kristeller, 1983; Litchfield et al., 2021; Liu et al., 2018). According to research insome countries, religion impedes the creative process (Bénabou et al., 2015; Dollinger, 2007; Liu et al., 2018). This seeming contradiction is interesting to discuss in terms of the Indonesian Government's aspiration to foster Indonesian young people's innovation while upholding moral values, especially in primary education, where the foundation of both CCT and moral character is laid.

In Indonesian primary schools, as outlined in the *Merdeka* curriculum, young students are encouraged to engage with critical thinking skills and creativity while guided by strong moraland religious values. The integration of faith-based values and CCT at this early stage can be harmonised by ensuring that teaching methods and classroom activities encourage both independent thought and ethical behaviour. For example, inquiry-based learning can be applied to explore both scientific concepts and moral dilemmas, enabling students to use CCT while reflecting on their actions through the lens of their faith.

As Indonesia is a multiculturally diverse country and the majority are Muslims, it is undeniable that the Islamic perspective influences state life. In relation to the two elements that seem contradictory, the Muslim philosopher Al-Ghazali (Ghazzâli & McCarthy, 1999) argues that logic plays a crucial role in argumentation, and its principles have significantly contributed to the development of Islamic theology and jurisprudence. He firmly believed that"religion and science should not be mutually exclusive and that embracing scientific knowledge is essential for the advancement of society" (Jung, 2023, p. 107). He further describes that proper education is used to get closer to God (*Allah Subhanahu Wa Ta'ala*) and can bring happiness to the world. The reasoning for integrating religious faith and CCT centres on the sources of knowledge and how to acquire it, as well as deciding whether the curriculum and teaching methods are appropriate for students and the current state of society (Alfiah, 2020). Further, based on the perspectives of *Muhammadiyah* as the most prominent Islamic organisation in Indonesia, it perpetuates that *Muhammadiyah* develops the spirit of *Tajdîd* and *ijtihad* involves critically examining information, weighing different options, and using evidence and reasoning to make logical conclusions for matters that are not explicitly argued in Qur'an and Sunnah and avoids *taklid,* which means following religious teachings blindly,

without adequate understanding and arguments (Nurlaila Al et al.,2022).

The Indonesian educational approach outlined in the *Merdeka* curriculum demonstrates thatit is possible to harmonise CCT with faith-based values. This approach aims to produce individuals who are not only innovative and analytical but also grounded in strong moral andethical values. In this context, reconciling CCT or logical thinking with religious faith and noble character requires an understanding that these elements are not inherently contradictory but can be complementary (Nofal, 1993; Salsabila & Taufikin, 2024). CCT should enable students to engage deeply with their faith, question and understand it on a profound level, foster innovation and problem-solving skills that can be used to address bothsecular and religious challenges and apply it meaningfully in their lives (Islamic Studies and Research Academy (ISRA), 2016).

For primary schools, the *Merdeka* curriculum introduces five project-based learning (PBL) themes: sustainable living, local wisdom, *Bhinneka Tunggal Ika* (unity in diversity), technology and entrepreneurship (Nurani, 2022). Schools select two themes annually to explore through collaborative projects, encouraging student engagement with local culture and environmental issues. Teachers are expected to create contextually meaningful learningenvironments, involving parents and the community as partners, and act as agents of change in their regions by sharing their learning with fellow teachers (Santosa, 2022). The *Merdeka* curriculum's emphasis on CCT reflects this by encouraging student engagement with both intellectual challenges and moral reasoning, ensuring that education remains grounded in local contexts while preparing students for a rapidly changing world.

2.5 Teaching critical and creative thinking in primary school

This section examines the literature on CCT relevant to primary schools in Indonesia. This section discusses the literature on CCT in primary schools, with a focus on its relevance to Indonesian education. It begins by exploring the philosophical foundations of CCT, followed by a look at global perspectives on teaching these skills in primary settings. The discussion then narrows to the Indonesian context, analysing the challenges and opportunities in integrating CCT into local classrooms. Finally, it highlights particular activities and strategiesthat facilitate the development of CCT. This review aims to provide an overview of CCT's role in fostering critical and creative capacities among young learners and how it aligns withthe goals of Indonesian educational reform.

2.5.1 Philosophical review of critical and creative thinking

Sternberg (2006) and Craft (2005) suggest that CCT skills are not only essential in their own right but are also deeply interconnected with each other. However, several CCT theories have been developed and no consensus on a single definition exists. Some scholars view critical thinking as divergent thinking, which involves an individual developing an argument and supporting it with

evidence, drawing conclusions and gathering information to solve problems (Baker et al., 2001; Kousoulas & Mega, 2007). In contrast, creative thinking is often described as convergent thinking that produces and applies new ideas in a new way that involves novelty and appropriateness (Halpern, 1997; Lai, 2011; McIlvenny, 2013; Sternberg, 1986; Todd, 2016; Willingham, 2007). Sweller (2022) defines “creative thinking asnovel thinking that is useful, while critical thinking requires assessing statements and situations in a manner that allows reconsideration of stated views” (p.2)

Despite this distinction, many argue that components of CCT overlap. For example, Yang and Lin (2004) suggest that elements of creativity are necessary for critical thought and vice versa. I adopt the position of Paul and Elder (2019), who propose that the components of CCT are mutually influential and occur in response to challenges such as a problem, project or question. In this view, creative thinking generates ideas or solutions, while critical thinking evaluates their feasibility or appropriateness. My study aligned with this integrated approach,reflecting the interrelated and complementary nature of CCT (Norris & Ennis, 1989; Birgili, 2015; Misechko & Lytniova, 2022). The interrelated nature of CCT refers to how critical and creative thinking constantly interact and influence each other. For instance, creative thinking helps generate new ideas or innovative solutions, while critical thinking assesses and refinesthose ideas, ensuring they are logical, applicable, and relevant. Without creative thinking, critical thought might be limited to conventional approaches, while without critical thinking, creative ideas might lack structure or practicality (Ulger, 2016). The complementary nature ofCCT means that these two types of thinking support each other in solving problems.

Creative thinking pushes the boundaries of what is possible, introducing novelty and originality, while critical thinking ensures that these new ideas are grounded in evidence andreason. Together, they provide a balanced approach to problem-solving—one that encourages innovation while maintaining practical applicability (Nasution et al., 2023).

The process of developing CCT begins early in the learning experience and requires active engagement. Moreover, environmental factors play a crucial role in cultivating these capacities, as active participation in meaningful, contextually relevant tasks fosters CCT (Pujiastuti & Lestari, 2020; Talebi & IranNejad, 2020; Van Gelder, 2001). In this sense,learning environments that encourage exploration, reflection and problem-solving are essential for the growth of CCT.

2.5.2 Global perspectives on teaching critical and creative thinking inprimary school

CCT has emerged as a pivotal educational objective worldwide, driven by the necessity to equip students for intricate and evolving future challenges (Ramamonjisoa, 2024). TeachingCCT in primary schools involves developing students’ abilities to think deeply, question assumptions,

generate novel ideas and solve problems creatively. This section examines empirical research on the implementation of CCT in primary education globally, highlighting recent studies and evaluating their contributions to the field.

Research on integrating CCT into primary education has gained substantial attention in several countries. In Scotland, for example, Ritchhart et al. (2011) and Dajani (2016) emphasise the role of visible thinking routines in fostering a classroom culture that promotesCCT. These routines encourage students to externalise their thought processes through documentation and reflection, enhancing their critical analysis and creative imagination. Similarly, Kyritsi and Davis (2021) examine Scotland's Curriculum for Excellence, emphasising that cultivating creativity requires participatory frameworks that allow forreflection, co-construction, and a focus on diversity, equity and collaboration.

In Asia, countries such as Pakistan and Malaysia have placed increasing importance on CCT through PBL and thinking skills-based instructional strategies. Rehman et al. (2023) highlight the effectiveness of PBL in teaching mathematics to Grade 5 students in Pakistan,showing how it fosters C21 skills such as collaboration, problem-solving and creativity. Rehman et al.'s study (2023) illustrates the value of PBL as an instructional tool in the Pakistani context, demonstrating that active, student-centred learning can significantly enhance both critical and creative capacities. In Malaysia, Alghafri and Ismail (2014) investigated the effects of thinking-on-thinking skills on primary school students. Their study showed that using thinking skills-based instructional strategies can boost creativity and learning, underscoring the need for explicit teaching of CCT in the classroom.

These global study examples reveal common strategies that prioritise inquiry-driven and PBL to foster CCT. Through visible thinking routines in Scotland or PBL in Pakistan, the objective is to generate supportive environments where students can reflect on their thoughtprocesses, collaborate with peers and engage in creative problem-solving. However, the successful implementation of these strategies relies heavily on teacher facilitation and professional development (Rosken-Winter et al., 2021). Teachers must possess the requisiteskills to foster CCT in their classrooms, as their role is critical in shaping student outcomes (Gill, 2012). The studies in Scotland and Pakistan highlight the importance of CCT and the various approaches different countries have taken to implement them in primary education. While the methods may differ, the core principles of inquiry, reflection and collaboration remain consistent. Inquiry encourages students to actively question, investigate, and explore concepts, driving deeper understanding. Reflection allows students to critically assess their learning processes, evaluating what they have learned and how they approached problems. Collaboration fosters teamwork, enabling students to share ideas, solve problemstogether, and enhance CCT. These studies provide valuable insights into effective strategiesand challenges in fostering CCT, emphasising the need for environments

where students feel safe to explore, reflect and innovate.

Overall, global approaches to CCT provide valuable lessons for developing these skillsin students. As primary education evolves, fostering CCT will remain a priority, requiring continued research, innovation and teacher training. These insights are especially relevant for Indonesia, where integrating CPoP into TPL can enhance CCT in primary schools.

2.5.3 Teaching critical and creative thinking in the Indonesian context

Recent studies on teaching CCT in Indonesian primary schools underscore the critical needfor promoting CCT skills among students. These skills are crucial for students to navigate the complexities of the contemporary world, solve problems effectively and innovate. According to research by Suratmi and Sopandi (2022), teachers generally possess good knowledge, skills and attitudes regarding critical thinking. However, further investigation is needed to understand how these competencies are implemented in classroom practices. Notably, Rulyansah (2023) and Agusta and Noorhapizah (2020) signify that while teachers recognise the significance of developing CCT skills, many feel they need to be more prepared to teach these skills. This indicates a significant gap between teacher awareness and their preparedness to implement CCT effectively in the classroom. Supportive learning environments are another vital component of nurturing CCT. Weran and Kuswandono (2021)highlight the importance of environments that integrate real-life tasks in supporting creative thinking. Welcoming mistakes and accepting new ideas as part of the learning process are essential for developing students' creativity. These processes encourage students to experiment, take risks and learn from failure, which are critical aspects of creative thinking (Smith, 2020). Further real-life problems encourage students to utilise their knowledge and skills to solve practical issues in their lives, supporting a comprehensive understanding and engagement with the subject matter (Dolan, 2020; Gill, 2012; Laware & Walters, 2004;Utomo et al., 2020)

Despite recognising the significance of CCT, challenges continue in effectively developing these skills among students. Aida et al. (2019) found that the critical thinking capacities of primary school students were inadequate and needed to be practised through specific learning models. Teachers struggle to develop CCT skills due to various limitations, such aslack of access to technology and insufficient training in CCT skills, especially in anticipating the difficulties encountered during classroom practices (Ainun Nikmah et al., 2021; Tatag, 2014). Surya et al. (2018) reveal that teachers encounter challenges in teaching critical thinking to primary school students due to their lack of knowledge in developing learning activities that support critical thinking, such as practising open-ended questions.

These challenges highlight the necessity for robust professional learning programs that equip teachers with the knowledge and tools to foster CCT in their classrooms. Sustained professional

learning programs and long-term ongoing training are recommended to bridgethis gap (Katuuk, 2014). Such programs should emphasis on improving teachers' undersatanding, skills and attitudes in developing students' CCT abilities (Suratmi & Sopandi, 2022; Tatag, 2014). By addressing these gaps through comprehensive TPL initiatives, teachers can be more equipped to cultivate CCT skills in their students, hence improving the overall quality of education in Indonesia.

My research focused on implementing CPoP to foster CCT, which is particularly relevant given these challenges. CPoP emphasises the integration of local context and real-life problem-solving, aligning well with the need for supportive learning environments that promote CCT. Creating activities that promote CCT for some teachers might be difficult for those teachers who mainly use memorisation and rote learning activities. If they want to enhance children's CCT skills, providing the students with various activities that encourage exploration, problem-solving, and open-mindedness is essential. By incorporating CPoP intoTPL, teachers can be equipped to design learning experiences that are contextually relevantand engaging for students, thereby stimulating CCT more effectively.

2.5.4 Activities supporting critical and creative thinking

The development of CCT capabilities in primary school students is pivotal for nurturing lifelong learning skills and adapting to the complexities of the contemporary society. The research literature offers a multitude of strategies and activities that educators can implement to enhance these skills in young learners. Evaluating these activities reveals both their potential and the challenges inherent in their implementation that can be adapted in theprimary school context in Indonesia.

One widely recognised pedagogical approach for nurturing CCT in primary school students is PBL. PBL involves students in real-life projects that necessitate critical thinking, problem- solving, collaboration and various forms of communication (Antić & Spasić, 2012; Kokotsaki et al., 2016). According to Bell (2010), PBL enhances students' understanding of content while developing their C21 ability, which includes thinking critically and creatively. Moreover, Larmer et al. (2015) emphasise that PBL can be adapted across subjects, ensuring deep understanding and skill development. However, successful implementation of PBL requires substantial teacher training and support and a curriculum that allows for flexibility and time toengage in projects deeply. Challenges include managing diverse student abilities and ensuring that projects remain rigorous and aligned with learning objectives (Aldabbus, 2018).In relation to the *Merdeka* curriculum, teachers should conduct PBL based on the themes offered. Similarly, inquiry-based learning promotes primary school students to formulate questions, engage in research and explore topics deeply, promoting curiosity and intrinsic motivation (Chu et al., 2021; Yoshina & Harada, 2004). Chu et al. (2021) and Yoshina & Harada (2004) suggest that this approach fosters CCT as students evaluate information, synthesise findings and present their conclusions.

Another effective strategy for developing CCT capabilities in primary education is integrating the creative arts into the curriculum. Artistic activities such as drawing, painting, music and drama offer students with opportunities to express themselves creatively and think outside the box. In primary schools, these activities engage children's imagination and encourage problem-solving, collaboration, and experimentation in ways suited to their developmental stage. Eisner (2002) argues that the arts stimulate both cognitive and affective domains, encouraging experimentation, risk-taking and original idea development. Additionally, Winneret al. (2013) support the notion that arts education fosters creativity and innovation. However, the integration of arts into the curriculum often faces challenges such as limitedtime, resources and support from educational stakeholders who may prioritise traditional academic subjects (May, 2013).

Furthermore, collaborative learning activities, where primary school students work together in groups to attain shared goals, significantly contribute to the development of CCT. In the primary classroom, cooperative learning encourages young students to share ideas, listen toothers, and work through problems collectively. Johnson (2015) asserts that cooperative learning promotes positive interdependence, individual accountability and direct interaction. Additionally, cooperative learning improves both social and cognitive outcomes, enhancing students' CCT skills. Despite its advantages, cooperative learning requires careful planning and management to ensure the engagement and contribution of all students. Teachers mustbe skilled in facilitating group dynamics and resolving conflicts to maximise the benefits of cooperative learning (Gillies, 2016).

In addition to these methods, incorporating digital technologies in the primary school classroom offers new avenues for enhancing CCT capabilities. Tools such as educational software, online research databases and interactive simulations help teachers create activities to engage interactive learning experiences for young students. For example, educational games and simulations can help primary students develop problem-solving skills, while digital storytelling platforms can encourage creativity and narrative thinking (Kirginas, 2022). Kuhlthau et al. (2015) highlight those digital tools support higher-order thinking by allowing students to access, analyse and evaluate information from multiple sources. Furthermore, Erstad and Voogt (2018) emphasise the need for teachers to be proficient in digital literacy to guide students effectively. However, the effective use of digitaltechnologies requires significant investment in infrastructure, ongoing teacher training and asupportive policy environment. Additionally, there is a risk of technology becoming a distraction if not integrated thoughtfully into the learning process.

Finally, encouraging primary school students to reflect on their thinking processes and learning experiences is crucial for developing CCT. Teachers can promote young students' CCT by involving them in interactive learning methods like dialogues that allow for the exchange of opinions and logical conclusions (Kuan & Tsai, 2013). Moreover, integrating reflective practices into problem-solving techniques enables students to analyse why their initial plans failed, identify

potential mistakes or deficiencies, and explore ways to correct them (Kousoulas & Mega, 2007; Park et al., 2021). Implementing reflective practices, such as learning journals, think-aloud sessions and self-assessment checklists, can assist students in cultivating these skills. CCT activities that enhance the students' flexibility and the possibility of looking at the problem based on the context should also be encouraged, forexample, problems related to the learners' everyday life (Birgili, 2015). The questions shouldsupport deep thinking, going beyond just practising *why*. They should also include exploring questions like *what if?* or *what about?* (Combs et al., 2009; Kuan & Tsai, 2013). With these practices, primary school students are getting used to having strategic plans, finding alternatives and considering risk in every action since their foundational years. However, nurturing a reflective culture requires a supportive classroom environment and a commitment to regular practice from teachers and school leaders. The research literature highlights a variety of activities and strategies that can effectively support the improvement of CCT capabilities in primary school students through the implementation of CPoP. By integrating PBL, inquiry-based learning, creative arts, collaborative learning, digital technologies and reflective practices into the curriculum, teachers can create a rich and supportive environment that nurtures these essential capabilities. While PBL remains a central approach due to its alignment with real-life problem-solving and critical thinking development, the combined use of other methods, suchas creative arts and inquiry-based learning, ensures a comprehensive approach to fostering CCT. However, successful implementation requires addressing challenges related to teachertraining, resource allocation and curriculum flexibility. By learning from global best practices and investing in sustainable, collaborative frameworks, my research can better support teachers in transforming their pedagogical practices that foster CCT through CPoP and ultimately improve the quality of education.

2.5.5 Assessing students' critical and creative thinking

Assessing CCT is critical not only for understanding whether learning goals have been achieved but also for reflecting on teaching practices and setting future objectives (Mansell et al., 2009). However, assessing CCT presents challenges, as it requires a multifaceted approach. The literature reveals various methods, including rubrics that assess both the process and the product of thinking (Lai & Viering, 2012; Shively et al., 2018). Traditional assessments, which focus on measurable outcomes, often fail to capture the complexity of CCT (Shepard, 2000; Veldhuis et al., 2013). Combs et al. (1987) argue that assessing CCTrequires a more holistic approach, involving the generation and refinement of ideas while regulating thoughts and attitudes.

In this study, I adapted the ACARA framework and combined it with elements from the Indonesian *Merdeka* curriculum to create a comprehensive model for assessing CCT. ACARA (2022) provides a comprehensive framework for assessing CCT, outlining sub- elements and learning continuums from foundational levels to Grade 10. This frameworkensures clear progression in students'

thinking skills but requires consistent training andfamiliarity among educators for effective implementation. In Indonesia, where such systematic frameworks are less established, there is a need for localised resources and assessment tools that align with ACARA's structure but are tailored to the cultural and educational context of Indonesian primary schools.

2.5.5.1 Critical and creative thinking in the Australian curriculum

CCT is one of the seven general capabilities embedded in the Australian curriculum, managed by ACARA version 9 (2022). The framework emphasises cognitive skills that enable students to think deeply, creatively and critically across a variety of disciplines (Ab Kadir, 2017). Notably, while ACARA sets national standards, the curriculum implementation is adaptable by individual states and territories to address local needs, contextual factors and priorities (Jonker et al., 2018). This flexibility provides opportunities for tailoring CCT approaches in response to diverse student populations and educational environments, but it also raises challenges regarding consistency and equity in implementation. For example, the South Australian curriculum is adapted from the Australian curriculum to reflect the purpose and strategy for public education in South Australia. Teachers and school administrators work in partnership with families and communities to nurture, develop and empower all South Australian children and young people with the knowledge, skills and capabilities they need to become fulfilled individuals, active, compassionate citizens and lifelong learners (Browne & Manatakis, 2014). Specific to CCT, the South Australian curriculum aligns with the Australian curriculum, and ACARA provides a developmental learning continuum that outlines how CCT progresses from the foundation level through to Grade 10. This continuumis organised into key sub-elements, including:

- inquiring: identifying, exploring and clarifying information and ideas
- generating ideas, possibilities and actions
- reflecting on thinking, actions and processes
- analysing, synthesising and evaluating reasoning and procedures (ACARA, 2021).

This structure guides teachers on the progression of students' thinking skills, helping them design activities and assessments that align with these developmental stages. However, theflexibility of the Australian curriculum allows individual states and territories to modify the framework to better suit their local contexts, resources, and student needs (Jonker et al., 2018; Lingard, 2010).

The South Australian curriculum highlights a shift from *learning about* content to *understanding* that knowledge is deepened *by doing*, emphasising the importance of active, experiential learning (Bansal & Nagpal, 2015; Wooding, 2019). This approach activates and nurtures learners' dispositions, shaping their ways of being and thinking. By connecting capabilities such as CCT to conceptual understandings and subject-specific content, the curriculum consolidates key concepts from the Australian Curriculum Version 9 (Moss et al., 2019). It elevates content beyond simple

knowledge acquisition, fostering deeper conceptualunderstanding (Asyari et al., 2021). Furthermore, the curriculum values opportunities for local contextualisation, ensuring that learning is relevant and meaningful within South Australia's unique social, cultural and environmental contexts (Uleanya & Rugbeer, 2018).

2.5.5.2 Critical and creative thinking in the Indonesian curriculum

The Indonesian Ministry of Education, Culture, Research, and Technology (MoECRT, 2022a, 2022b) (previously the Ministry of Education and Culture) emphasises the importance of CCT in the *Merdeka* curriculum, which includes CCT in the PPP framework. Students are projected to process information, make connections, analyse, evaluate and make decisions, while creativity involves generating original ideas and producing meaningfulwork (BSKAP, 2022). For students in Grades 1 and 2 (age 6–8) at the A stage, CCT learning outcomes focus on basic skills such as asking questions, processing information and combining ideas in imaginative ways, as shown in Table 2.1.

Table 2.1 Critical and creative thinking learning continuum (BSKAP, 2022)

Critical Thinking Learning Continuum		Creativity Learning Continuum	
Sub-element	The end of Phase A (Grade 1-2, age 6-8)	Sub-element	The end of phase A (Grade 1-2, age 6-8)
Element of acquiring and processing the information and ideas		The element of generating original ideas	
Asking Questions	Asking questions to satisfy one's curiosity and to identify issues related to oneself and the surrounding environment		Combining several ideas into meaningful imaginative ideas to express thoughts and/or feelings.
Identifying, clarifying and processing information and ideas	Identifying and processing information and ideas		Exploring and expressing thoughts and/or feelings in the form of works and/or actions while appreciating the works and actions produced.
The element of analysing and evaluating reasoning and its procedures.		The element of having flexibility in thinking when seeking alternative solutions to problems.	
Analysing and evaluating reasoning and its procedures.	Engaging in concrete reasoning and providing reasons to solve problems and make decisions.		Identifying creative ideas to address situations and problems.
The element of reflecting on thinking and			

thought processes.			
Reflecting on and evaluating one's own thinking.	Communicating what one is thinking in detail.		

Table 2.1, as a framework stated in the *Merdeka* curriculum (BSKAP, 2022), outlines broad categories and sub-elements for CCT for young students (end of Phase A, Grade 1–2, age6–8 years). It provides a high-level view of elements involved in CCT, such as acquiring and processing information, generating original ideas, analysing and evaluating reasoning, and reflecting on thought processes. However, it lacks detailed descriptors that specify how these elements manifest in student behaviour. The descriptions in Table 2.1 are broad and do not offer concrete examples of student actions. For instance, while *asking questions to satisfy one's curiosity* is mentioned, there are no specific indicators or examples of the typesof questions students might ask or how they might process the answers.

Additionally, Figure 2.1 recognises the importance of combining cognitive skills with creative abilities but does not explicitly address the role of attitudes and dispositions, such as motivation and confidence, which are critical in fostering a holistic development of CCT. Combs et al. (2009, p. 9) state that "critical and creative thinking should exhibit certain attitudes and disposition such as being perceptive and flexible, motivated and confident". While the content in the table highlights the importance of flexibility in thinking and problem-solving, it lacks detailed steps or processes for students to follow, making it difficult for educators to assess these skills effectively, it needs to provide detailed steps or processes for students to follow, to make it easier for educators to assess these skills effectively. Consequently, although Figure 2.1 sets a foundational understanding of CCT, it requires further development to include specific, actionable descriptors and incorporate the essentialattitudes and dispositions needed for comprehensive assessment.

Reflecting on the provided framework, it becomes evident that assessing CCT in Indonesia still faces hurdles. The reliance on standardised testing often overlooks the qualitative aspects of CCT, such as attitudes and dispositions. As Basadur and Basadur (2011) highlight, competencies in CCT are linked not solely to logical processes but also to personalfactors like motivation and confidence. Incorporating the framework proposed by Combs et al. (2009) into the assessment design is crucial because it incorporates the framework proposed by Combs et al. (2009) into the assessment design is crucial because it emphasises assessing CCT, particularly attitudes and dispositions, through formative methods. This allows for ongoing feedback and reflection, supporting the continuous development of essential personal traits like motivation, flexibility, and confidence. Combs et al. advocate for a holistic view of CCT, recognising that effective thinking involves cognitive processes and personal characteristics such as motivation and flexibility. Their approach supports a more comprehensive evaluation by including these attitudes alongside traditional cognitive measures, thus addressing the limitations of standardised assessments, which

often focus purely on cognitive outcomes, such as problem-solving and critical thinking, without accounting for the personal factors that contribute to effective thinking (Rear, 2018).

To address these gaps, an integrated assessment approach combining the elements described by MoECRT (2022), Combs et al. (2009) and ACARA (2012) is recommended. I emphasise adopting ACARA as this resource would provide concrete examples and detaileddescriptors of student actions and behaviours, addressing the need for more specificity identified in previous frameworks from MoECRT. By doing so, teachers can better observe and assess CCT in their students, leading to more accurate and meaningful evaluations.

2.5.5.3 Proposed assessment framework for critical and creative thinking

This holistic assessment approach encompasses inquiring (identifying, exploring and organising information and ideas), generating ideas (creating possibilities and actions), reflecting (thinking about processes and transferring knowledge to new contexts), analysing and evaluating (applying logic, drawing conclusions and evaluating outcomes), motivation (persisting and maintaining intrinsic motivation), and confidence (exhibiting courage and risk-taking). These elements are divided into specific sub-elements to offer a comprehensive assessment beyond traditional exams, ensuring that both cognitive skills and personal attitudes are measured.

Figure 2.2 provides a detailed description of these elements as applied to students in Grade 1–2, combining insights from MoECRT (2022), Combs et al. (2009) and ACARA (2012). By integrating these frameworks, teachers can better capture the full spectrum of students' CCTabilities, thus fostering a more adaptive and innovative generation of learners.

Table 2.2 The elements of analysing critical and creative thinking in the Indonesian context (ACARA, 2021; Combs et.al, 2009; MoECRT, 2022)

Sub-element	Level 1 Typically, by the end of Phase A (Grade 1–2, age 6–8), students:
Inquiring – identifying, exploring and organising information and ideas element	
Pose questions	pose factual and exploratory questions based on personal interests and experiences
Identify and clarify information and ideas	identify and describe familiar information and ideas during a discussion or investigation
Organise and process information	gather similar information or depictions from given sources
Generating ideas, possibilities and actions element	
Imagine possibilities and connect ideas	use imagination to view or create things in new ways and connect two things that seem different
Consider alternatives	suggest alternative and creative ways to approach a given situation or task
Seek solutions and put ideas into action	predict what might happen in a given situation and when putting ideas into action
Reflecting on thinking and processes element	

Think about thinking (metacognition)	describe what they are thinking and give reasons why
Reflect on processes	identify the main elements of the steps in a thinking process
Transfer knowledge into new contexts	connect information from one familiar setting to another
Analysing, synthesising and evaluating reasoning and procedures element	
Apply logic and reasoning	identify the thinking used to solve problems in given situations
Draw conclusions and design a course of action	share their thinking about possible courses of action
Evaluate procedures and outcomes	check whether they are satisfied with the outcome of tasks or actions
Motivated	
Persisting	continue to work until goals are met
Maintaining intrinsic motivation	Identify how the task or problem provides personal satisfaction
Recognising relevance	Identify personal beliefs and values relating to the context
Confident	
Exhibiting courage of convictions	Publicise thoughts or ideas and accept criticism from others
Risk-taking	Describe how the challenges faced in the process of meeting their goal encouraged them to work beyond their comfort level

As outlined above, while the Indonesian curriculum provides a strong foundation for CCT, integrating the detailed framework proposed by Combs et al. (2009) offers a more nuanced approach to assessment. By combining elements from MoECRT, ACARA and Combs, educators can better capture the full range of CCT skills, including personal attitudes and dispositions. This integrated approach will improve the accuracy of assessments and fostera more holistic development of CCT in primary school students.

2.6 Conclusion

This chapter described TPL as involving teachers as adult learners, and the outcome of TPLis to give impact to the students' learning from teachers improving their curricular and pedagogical practices. Issues and challenges of designing TPL in Indonesia that affect the effectiveness of conducting professional learning were detailed. To provide a comprehensive understanding of the study's context and the model of TPL, this chapter outlined the history of TPL in Indonesia and the role of CPoP as a tool in TPL. This approach aligns with the Indonesian curriculum, which explicitly defines the profile of Indonesian students as individuals who embody national values while acquiring C21 skills. Among these skills, CCT is highlighted as crucial for the needs of contemporary Indonesian society. The chapter demonstrated how CPoP offers a suitable alternative approach to teaching and learning, effectively fostering CCT in alignment with both the curriculum and the unique context of Indonesia.

The literature review established that effective TPL is crucial for teacher development, especially in a diverse context like Indonesia. By positioning teachers as active learners andagents of change,

TPL encourages continuous improvement and adaptability in teaching practices. However, the traditional models of professional development prevalent in Indonesia often fail to meet these needs, highlighting the necessity for more responsive andcontext-specific approaches. The chapter also underscored the importance of integrating CPoP into TPL. This integration not only makes learning more relevant and engaging for students by connecting it to their local contexts but also aligns well with the goals of the Indonesian curriculum. CPoP fosters critical engagement with sociocultural environments, thereby promoting CCT among students. Key principles of effective TPL identified in this chapter include transformative learning, reflective practice and real-life problem-solving. Transformative learning involves fundamental changes in teachers' understanding, skills andattitudes. Reflective practice is essential for professional growth, allowing teachers to identify areas for improvement and engage in collective learning within a CoP. Real-life problem- solving activities ensure that professional learning directly impacts teaching practices and student outcomes by addressing practical, everyday challenges faced by teachers. The alignment of TPL and CPoP with the *Merdeka* curriculum highlights the potential for these approaches to enhance student learning outcomes. The curriculum's focus on integrating national values and C21 skills can be effectively supported through the implementation of CPoP, which enriches the educational experience by making it culturally and contextually relevant. In conclusion, this chapter has laid a comprehensive foundation for understanding the theoretical and practical aspects of TPL and CPoP. These insights arecrucial for developing effective professional learning programs that not only enhance teachers' skills but also improve student learning outcomes. The next chapter will delve into the conceptual framework of combining CPoP and CCT models and the framework of the TPL program that supports teachers in implementing CPoP to foster CCT.

CHAPTER 3: CONCEPTUAL FRAMEWORK

3.1 Introduction

This chapter explains the integrated model that combines CPoP and CCT within the contextof the TPL program, enriched by the principles of CPoP (Figure 3.1). While CCT is widely recognised as crucial for student development (Brookhart, 2010), the literature reviewed in Chapter 2 revealed several gaps. First, there is a need for a pedagogical model that connects CCT with PBE, that should emphasise the relevance of local contexts in developing these capacities. Second, there is a lack of practical strategies for teachers to foster CCT within the framework of CPoP. Third, there is limited evidence of the long-term impact of integrated CPoP and CCT approaches on student learning outcomes and community change (Dimick, 2016; Gruenewald & Smith, 2014; Sobel, 2004).

The integrated model is needed because a comprehensive framework for fostering these CCT capabilities in Indonesian primary education is not yet available. The model I explain in this chapter advances the Gruenewald (2003) model by combining the contextual and community-focused aspects of CPoP with the cognitive and creative dimensions of CCT. The model is designed to meet the aims of my study discussed in Chapter 1.

3.2 Critical pedagogy of place and a critical and creative thinking model

Figure 3.1 illustrates the model adapted from Gruenewald (2003a, 2003b), showing howCPoP can foster CCT

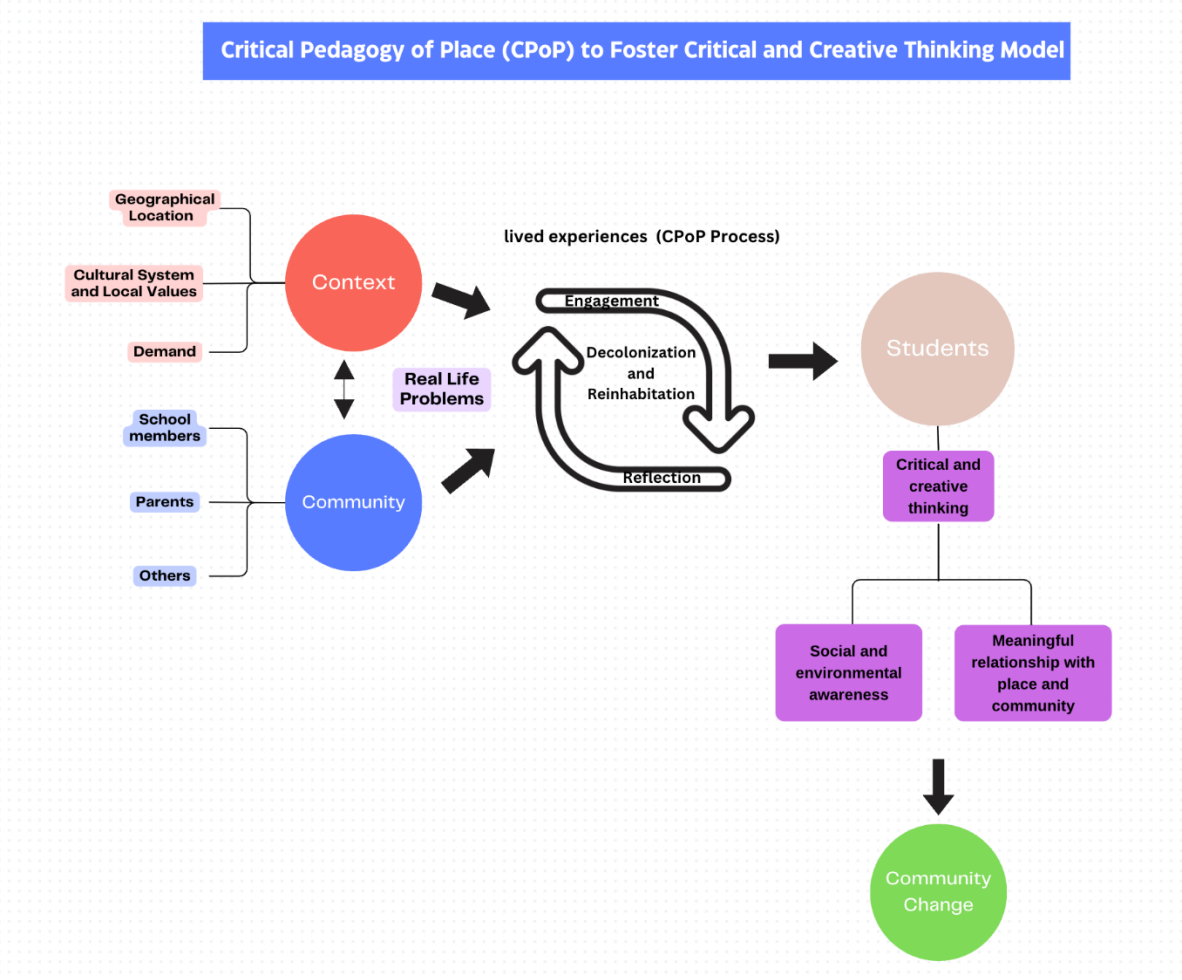

Figure 3.1 A novel model of implementation of critical pedagogy of place to foster a critical and creative thinking model (adapted from Gruenewald, 2003a, 2003b)

CPoP, as explored in Chapter 2, emphasises the spatial aspects of social experience that incorporate the importance of place, which covers the environment, community and the culture embedded in it (Gruenewald, 2003b). My adaptation of Gruenewald's (2003a, 2003b)model emphasises the importance of **context** (Figure 3.2) in the learning process, starting with the geographical location. In my model, the geographical location is the physical place where issues and learning occur, foregrounding the significance of the local environment (Preston, 2015). By grounding education in the specific geographical location of students, my model ensures that there is an emphasis on learning that is relevant to the issues that emerge in students' lives and are connected to the students' lived experiences. Additionally, the cultural system and local values are recognised as crucial in shaping the students' learning experience (Gruenewald, 2008). Also, an important component of the context is the inherent values of the community that provide a cultural backdrop that influences how students perceive and engage with the curriculum.

Furthermore, the demand from the educational environment and the broader community setsthe expectations and needs that the education system must meet. This includes understanding the goals and aspirations of the community, which in turn shapes the educational priorities and methods (Abimbola et al., 2024). Context comes with demands: cultural and social expectations,

learning expectations, and school and community expectations (Yoho & Moore, 2023).

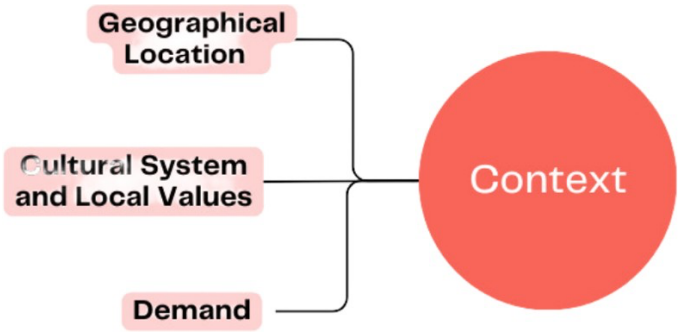

Figure 3.2 The components influencing context

The **community** (Figure 3.3) is the second central element in my model. The community includes various stakeholders who contribute to the context. The stakeholders are students,teachers, administrators and other school staff, and they are integral to the educational process. Their roles and interactions impact the effectiveness of the learning environment (Smith & Sobel, 2010). Parents are a big part of the school community, supporting their children's learning and the expectations of the school. Their involvement can enhance or diminish the learning experience, either ensuring that learning continues beyond the classroom or not (Đukić et al., 2022; Kousholt & Højholt, 2019). Other community members include local businesses, community organisations and cultural institutions that provide resources, opportunities and support for the students' learning journey (Elbaz, 2023). My model does not merely involve the community in a supportive role but positions it as a co- educator. For instance, parents and local organisations are not just seen as passive supporters of learning but are actively involved in creating learning experiences that extend beyond the classroom. This creates a learning ecosystem where formal and informal learning spaces intersect, aligning with the CPoP's goal of fostering CCT by engaging students with their local environment (Hufling et.al, 2017).

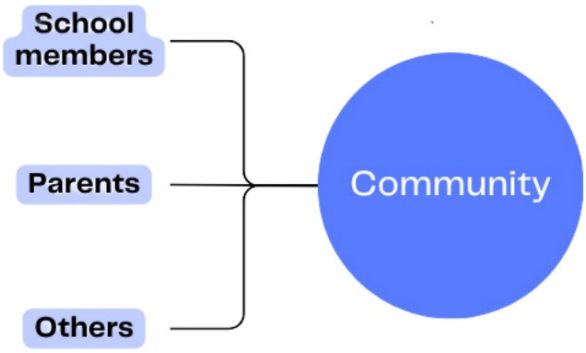

Figure 3.3 Components in community

My model asserts the need for teachers to know context and community in order to create **real-life, meaningful problems** (Figure 3.4) in the learning process. Context and community factors converge to present the real-life challenges and issues that are integral to the situated educational experience. By including real-life problems, my hypothesis is that the learning process becomes

meaningful and relevant to the students (Gackowski, 2003; Petrucco, 2019). This approach of bringing real-life problems into the students' learning encourages students to utilise their knowledge and skills to resolve practical issues in their community, cultivating a more profound understanding and involvement with the subject matter (Dolan, 2020; Gill, 2012; Laware & Walters, 2004; Utomo et al., 2020). In this model, real-life problems serve as a basis for creating learning practices that are educational, impactful, and more related to the students' life.

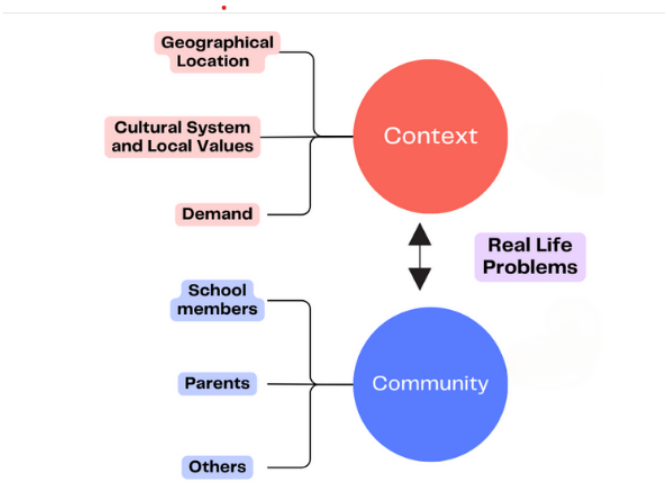

Figure 3.4 Real-life problem as a basis for learning

The model I developed places a strong emphasis on engaging students in lived experiences.These experiences are designed to be grounded in the students' context and community, making them relevant and meaningful (Gruenewald & Smith, 2014). These experiences involve activities that support active participation, creativity and critical thinking (Dolan, 2020). They challenge students to think beyond traditional methods, such as memorising and rote learning, and explore novel ways of understanding and solving problems, such asproblem-based learning and collaborative group work. Lived experiences are essential for fostering a dynamic educational environment that stimulates students' intellectual and creative capacities (Ritchhart et al., 2011). Students gain practical insights and develop a more profound connection to their learning by engaging with their immediate environment and community issues (Greenwood, 2008; Smith & Sobel, 2010; Vander Ark et al., 2020). These experiences help students relate their academic knowledge to real-life contexts, enhancing the relevance and impact of their learning to their personal and social life.

The process of decolonization and reinhabitation (Gruenewald, 2003a), explained in Chapter 2, are key components of my model. The process involves two main elements: **engagement** and **reflection** (Figure 3.5). Engagement refers to the active participation of students in learning experiences that challenge existing norms and encourage new ways of thinking (Ginting, 2021; Kahu & Nelson, 2018). Through engagement and teacher guidance,students are exposed to diverse perspectives and are encouraged to question and analyse traditional paradigms such as rote learning, hierarchical teacher-student relationships, and standardised testing that limits

creative thinking. Instead, students are prompted to explore participatory, student-centred approaches that emphasise collaboration, problem-solving, and critical engagement with their surroundings.

Conversely, reflection involves continuously contemplating these experiences to derive meaningful insights and promote growth. Meaningful insights refer to students' ability to link their learning to their personal experiences and the social and environmental challenges within their communities. By reflecting on these experiences, students can develop a better understanding of themselves, their role in their community, and how they can contribute to positive change. This process promotes growth by nurturing critical thinking and creativity, empathy, and social awareness towards their surroundings. This reflective process helps students internalise their learning and connect it to their personal and community contexts (Bassachs et al., 2020; Kulevičienė, 2022). The use of guiding questions such as: *what happened? What is happening now? What should happen here? What needs to be conserved, transformed, restored, or created here?* Are they helpful in strengthening what students are learning (Bowers, 2008; Greenwood, 2008)? The ultimate goal of this process is to decolonise traditional learning paradigms and encourage students to reinhabit their places with a renewed understanding and connection to the places they live in. Decolonising traditional learning paradigms means challenging and moving away from passive forms of education that emphasise rote memorisation and conformity to fixed knowledge structures. Instead, it promotes a pedagogy that values critical thinking, student agency, and recognising multiple ways of knowing, especially those rooted in local culture and context (Bowers, 2008; Gruenewald, 2008). Once students engage in this decolonization process, they are empowered to reinhabit their places—this refers to re-engaging with their local environments and communities with a revitalised sense of purpose and responsibility. They gain a comprehensive understanding of the ecological, cultural, and social dynamics of theirsurroundings, allowing them to contribute positively to the conservation, restoration, or transformation of these spaces (Gruenewald, 2003b).

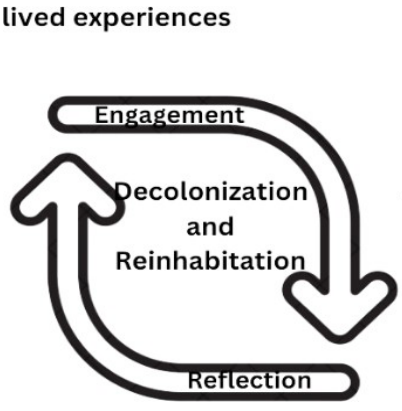

Figure 3.5 Factors involved in lived experiences

The reason for focusing on real-life problems is that they have been found to be valuable to

students' learning and development (Gleason et al., 2008; Maker, 2016; Maker et al., 2015). Real-life problems provide students with opportunities to engage in meaningful, context-based learning that fosters problem-solving, reflection, and active participation. This study focuses on Critical and Creative Thinking (CCT), emphasising their interconnection as two complementary processes essential to addressing real-life problems.

Critical Thinking involves reflective, reasoned problem-solving that enables students to analyze and evaluate challenges critically. Creative Thinking entails divergent, imaginative, and innovative approaches to developing actionable solutions (Pithers & Soden, 2000). Pithers and Soden (2000) argue that fostering critical and creative thinking is essential in education, enabling learners to question assumptions, generate new ideas, and develop solutions to complex problems. Within the context of this study, CCT is not treated as two separate capacities but as mutually reinforcing processes that enable students to critically assess real-life problems and creatively formulate solutions.

The development of CCT is closely tied to the CPoP framework. As illustrated in Figure 3.6, the CPoP process—comprising engagement, reflection, decolonization, and reinhabitation—provides the conditions that nurture CCT capacities. For instance, engagement fosters active participation in identifying and analysing local issues, while reflection enables students to connect their learning to real-life contexts. These processes guide students toward deeper critical analysis and creative problem-solving.

The CCT capacities fostered through this model encompass two key components:

1. Social and Environmental Awareness

   This involves enhancing students' understanding of social issues and environmental stewardship (Stevenson & Dillon, 2010; Stevenson, 2008). Students are encouraged to develop actionable, creative solutions by critically analyzing real-life social and ecological challenges while fostering a sense of responsibility and active citizenship (Kelley & Pelech, 2019).

2. Meaningful Relationships with Place and Community

   Through real-life problems, students build strong connections with their local contexts and communities (Gallant et al., 2017; Gruenewald, 2007; Huffling et al., 2017). By appreciating the value of their environment and culture, students collaborate with others—friends, school members, families, and broader community members (Smith & Sobel, 2010; Sobel, 2004; Vander Ark et al., 2020). These relationships foster a sense of belonging and motivate students to act as agents of positive change in their communities.

The components of social and environmental awareness and meaningful relationships with place and community are shared objectives between the CPoP framework and CCT. From a CPoP perspective, these components emphasize ecological sustainability, critical reflection, and reinhabitation (Gruenewald, 2003). Within CCT, they highlight students' ability to engage with real-life problems, think critically, and propose creative, actionable solutions while fostering active citizenship. Together, these shared components build students' CCT capacities, enabling them to analyze their surroundings critically, act responsibly, and propose innovative solutions. This interconnected process ultimately contributes to community change and ecological awareness—key goals of this study. To assess these outcomes, I developed an assessment rubric (see Table 3.1 and Table 3.2) focusing on social and environmental awareness and building relationships with the community.

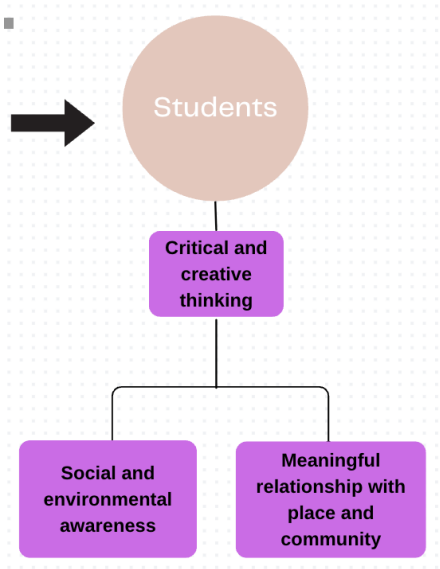

Figure 3.6 Student's critical and creative thinking components

The development of CCT capability in students ultimately leads to positive changes within the **community** (Figure 3.7) (Sivan, 2024). Students who are socially and environmentally aware and have meaningful relationships with their place and community are better equipped to contribute to community improvement and transformation (Vander Ark et al., 2020). By emphasising and fostering CCT skills and connections, my model aims to encourage learning environments whereby students are academically proficient, socially responsible, and community-oriented. This is because I position students as drivers of positive change, capable of addressing local challenges and contributing to the sustainableimprovement of their communities.

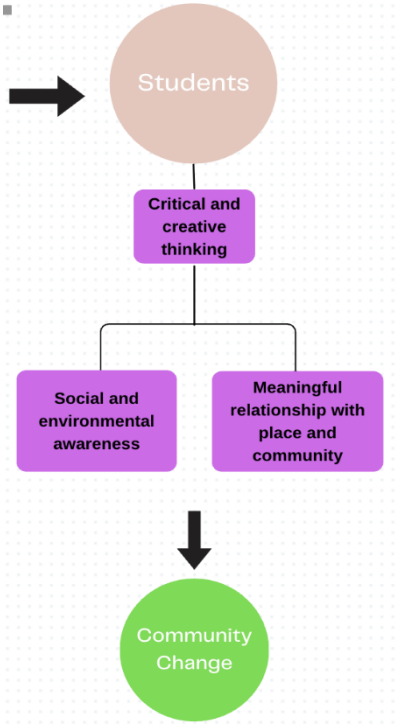

Figure 3.7 Students' critical and creative thinking impacts community

My model is explored within the TPL program for primary school educators. The goal is toenhance teaching practices that promote CCT among the students and strengthen the connection between learning and local communities (explained in Chapter 4). The framework of the TPL program for primary school educators is detailed in the following section, and the framework utilises a CoP model for teachers.

3.3 A framework for a teacher professional learning program in combination with community of practice

The integration of CPoP and CCT within the framework of TPL offers a model for enhancing pedagogical practices. This combined approach leverages the principles of PBE to ground learning in local contexts while encouraging CCT among educators. By embedding these elements within a CoP, the framework aims to promote continuous professional growth through collaboration, reflection and shared learning experiences.

My study presents a framework of professional learning programs for primary school teachers that employs a CoP approach, integrating classroom-based mentoring and community sharing. Mentoring is a collaborative, communicative, supportive and sincere process designed to help educators enhance their teaching skills, support professional growth and improve their overall effectiveness as educators (Fletcher & Mullen, 2012; Geletu, 2023). The primary goal of classroom-based mentoring in the TPL model is to enhance teachers' self-awareness, which is crucial for improving classroom practices, instructional strategies and student learning outcomes.

This approach is grounded in the understanding that effective mentoring fosters reflective practice and problem-solving (Smith& Lynch, 2014).

In this TPL framework, community sharing occurs through structured focus group discussions and interviews and is followed by classroom-based mentoring in two distinctphases, as outlined below.

3.1.1.1.1 Study 1: Community sharing through focus group discussions and interviews

The initial phase of community sharing took place during focus group discussions and interviews between me as the facilitator and the teachers participating in thestudy, where we came together to exchange ideas. In these sessions, teachers shared their prior experiences, challenges and knowledge while exploring new concepts related to CPoP and CCT. These discussions, guided by the facilitator, foster reflective dialogue and collaborative problem-solving, which are crucial for professional growth (Smith & Lynch, 2014; Geletu, 2023). As highlighted by Chien (2020) and Lynch et al. (2014), this dialogical approach promotes comprehension of teaching strategies and encourages teachers to reflect on how they can apply new concepts in their classrooms. The community-sharing phase helps teachers build a foundation of shared knowledge and reflective practicebefore moving on to more individualised support through classroom-based mentoring.

3.1.1.1.2 Study 2: Classroom-based mentoring and sharing with non-participant colleagues

After the community sharing phase, the second phase focuses on classroom-based mentoring, where teachers apply the strategies discussed in their own classroom settings. During this phase, observation is conducted to document how teachers implement CPoP and CCT in their teaching practice (Halim et al., 2018). The mentor provides immediate, personalised feedback based on real-time classroom observations, encouraging reflective practice and instructional improvement (Attard Tonna et al., 2017; Hussey & Campbell- Meier, 2020). This phase supports teachers in refining their classroom practices and contributes valuable observable data to the broader research documentation (Moyle, 2016).

In addition to classroom-based mentoring, teachers engage in community dissemination by sharing their experiences and insights with colleagues who were not part of the original TPL program. This dissemination process strengthens teachers' understanding of CPoP and CCT by requiring them to reflect deeply on their learning and explain it to others, which reinforces their own knowledge (Treleaven et al., 2012) and helps to spread the benefits of the TPL model more broadly across schools or regions contributing to a larger community (National Children's Bureau, 2016). Furthermore, discussing their implementation of thesepedagogical approaches with peers in different contexts promotes CCT and adaptation, enhancing their overall grasp of the concepts. As Goodhue and Seriamlu (2021) suggest, community dissemination benefits the broader teaching community and consolidates the professional growth of the teachers involved.

The overall design of the TPL model in this study was adapted from Sancar et al. (2021), who advocate for a blended approach that combines mentoring principles with strategic community dissemination. This adaptation aligns with the goals of CPoP, highlighting the importance of context, collaboration, and reflective practice. By integrating these elements, the TPL model fosters ongoing professional growth, reflective practice, and the developmentof a collaborative teaching community. Figure 3.8 presents the framework.

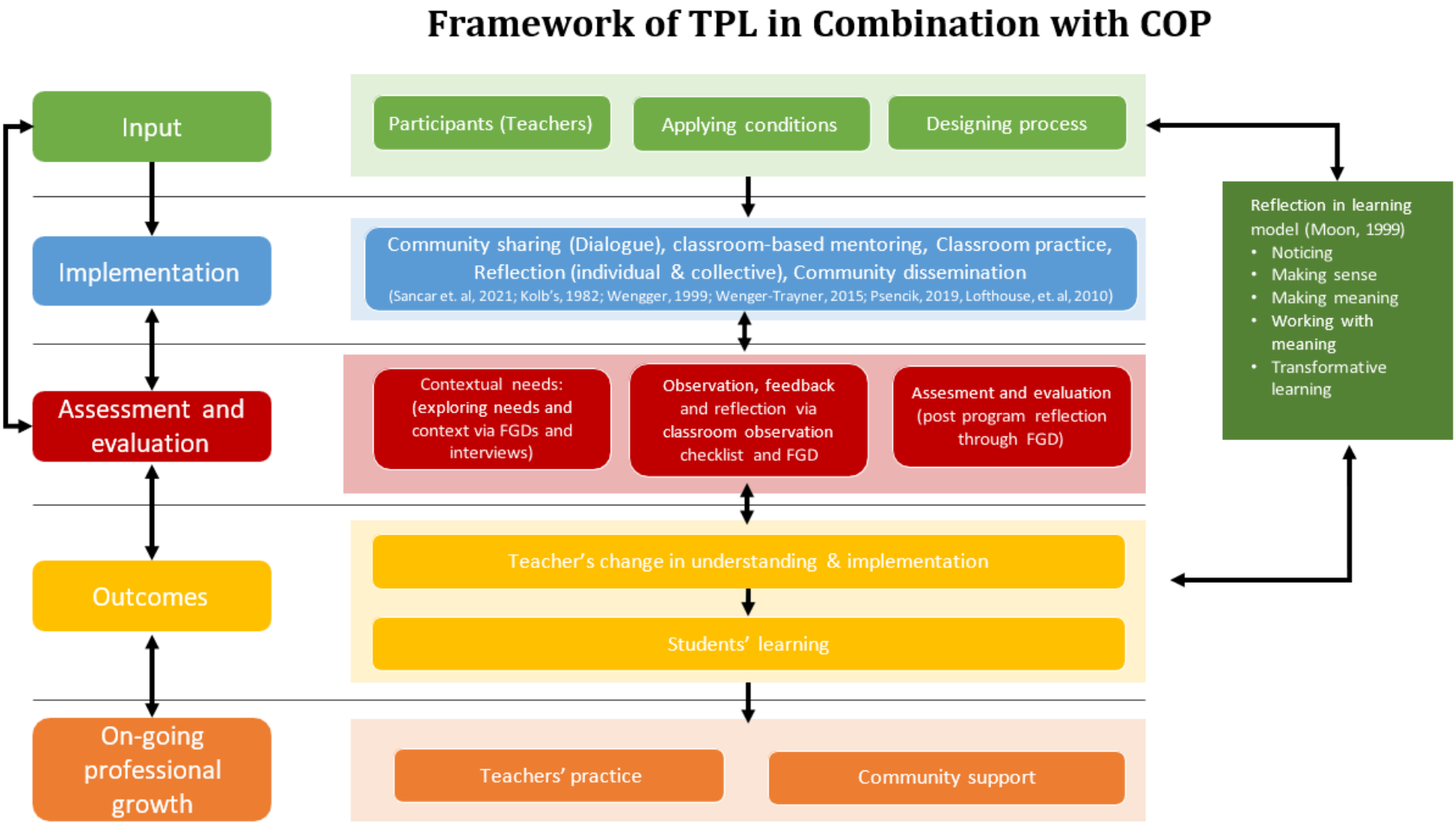

Figure 3.8 Model of teacher professional learning in combination with a community of practice

The TPL program model shown in Figure 3.8 highlights five important features: inputs, implementation, assessment, outcomes, and sustainability.

Input comprises three elements: participants, context and the design process (Sancar et al.,2021), as shown in Figure 3.9. The first element consists of the participants or learners, who,in this case, are teachers of all ages and have teaching experiences. The second element involves applying conditions that consider the context of the educators, such as their prior knowledge and experiences, sociocultural background and the needs of the learners. The third element is the design process, which includes activities that carefully consider and planfor the content in relation to the teachers' needs and aims of the TPL, its duration, the tools that will be used, such as templates, interaction and communication tools, and the delivery mode and accessibility. A significant aspect of the design process is the integration of the CPoP and CCT models. This integration provides a framework that guides the development of TPL activities. The CPoP component underlines the significance of understanding the local context and incorporating PBE principles. In contrast, the CCT component focuses on enhancing teachers' abilities to foster CCT skills in their students. Thus, the TPL program aims to develop teaching strategies that are contextually relevant and capable of promoting CCT among students.

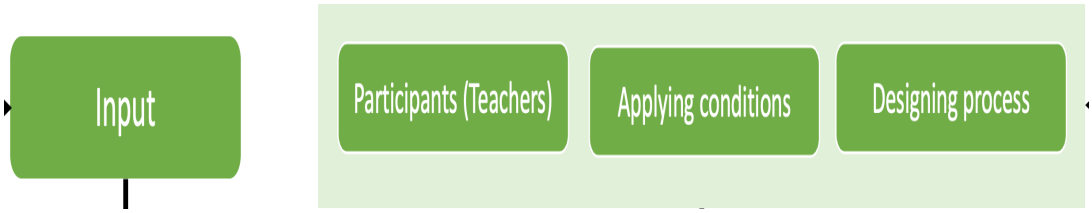

Figure 3.9 The elements of input

The **implementation** component shown in Figure 3.10 involves the presentation of learning activities by both me, as the facilitator, and the teachers. These activities are designed to help translate theoretical learning into practical classroom applications (Perry & Booth, 2024;Tapilouw et al., 2019). The facilitator's role is to guide the learning process, providing insights, resources and structure to ensure that the learning objectives – such as fostering CCT and implementing CPoP – are understood by the participants (teachers) (Becuwe et al.,2016; Perry & Booth, 2024). The teachers themselves are responsible for translating this learning into practice (Tapilouw et al., 2019). They do so by integrating the concepts of CPoP and CCT into their own teaching methodologies and classroom practices (Beni, 2021; Willemse et al., 2015) making their instruction more relevant to students' lives and local contexts (Gruenewald & Smith, 2014).

In the implementation process, the first step involves introducing the model of integrating CCT and CPoP to the teachers. This introduction helps them grasp how CPoP and CCT canwork together to foster critical and creative learning experiences for students. Following this, **dialogue** or **conversation** in the form of **community sharing** is essential for revealing both the prior

knowledge and experiences of the learners and the new learning specifically related to CCT and CPoP. These discussions allow the participants to involve in reflective dialogue, share their insights, and collaboratively explore how these concepts can be appliedin their own teaching practices (Christ et al., 2014).

The next phase of the implementation stage is experiential learning through classroom practices. Teachers apply their understanding of CPoP and CCT in real classroom contexts,integrating local issues and critical thinking strategies into their teaching. This deepens the lessons' relevance for the students and makes the learning experience more engaging by connecting it to their local environment (Gabrielson & Korsager, 2018). Classroom-based mentoring plays a crucial role at this stage, as the teachers' practices are observed by a mentor who provides direct, real-time feedback. This observation allows for immediate feedback that helps the teachers refine their instructional strategies and improve classroom practices (Reinke et al., 2014).

The final activity in the implementation phase is community dissemination, which aims to strengthen the role of the teacher as an agent of change. After participating in the TPL program, teachers are encouraged to share their new knowledge and experiences, specifically those related to CPoP and CCT, with their fellow teachers who were not engaged in the program. This dissemination occurs at the school, local or regional level. Ithelps extend the impact of the TPL program by fostering more networked learning communities and supporting the ongoing professional growth of other educators(Goodhue & Seriamlu, 2021; Henderson et al., 2010).

Figure 3.10 Activities involved in the implementation

Assessment and evaluation are integral to the TPL program but serve distinct purposes inthis study. Assessment is the ongoing process of gathering data to monitor teachers' progress, providing feedback, and facilitating reflection during the program (Qamar, 2015). It focuses on feedback that helps teachers adjust their practices in real-time, supporting continuous professional growth (Du Plessis, 2021; Shernoff et al., 2017). In contrast, evaluation takes place at the end of the program to reflect the overall success of the intervention by analysing outcomes such as changes in teaching practices and their impact on students' CCT skills through the teacher's observation (Maggopoulos & Svarna, 2023). Assessment and evaluation is conducted in three stages: contextual needs, observation, feedback and reflection, and assessment and evaluation

after the study (Darma, 2019; Stufflebeam, 2003; Zhang et al., 2011), as shown in Figure 3.11. Each stage is designed to provide opportunities for reflection and feedback aimed at enhancing the teachers' practicesand knowledge rather than formal testing and reporting.

The **contextual needs** phase explores and identifies the needs and context of the teachers(Benge et al., 2019; Grant, 2002). This includes understanding the school environment, the local community, and the particular issues teachers face in their classrooms (Cuiccio & Husby-Slater, 2018). Data for this phase are collected through semi-structured interviews and focus group discussions with the teachers. This exploration helps identify keyareas for development and informs the design of a meaningful and effective TPL program (Benge et al., 2019). Teachers share their expectations for the program through focus groupdiscussions and review their current practices. This input ensures that the intervention is grounded in the real needs of the participants and is sensitive to the context in which they work (Creswell & Creswell, 2017). For example, some teachers have limited access to resources such as materials, technology, or professional learning opportunities. The TPL program can be tailored to provide practical strategies and support that address the specific challenges teachers encounter in their daily work.

During the **observation, feedback and reflection** phase, teachers receive ongoingfeedback to support their development as they integrate CPoP and CCT into their classrooms. The goal of this phase is to monitor the progress of teachers and provide reflection opportunities to help them refine their teaching practices in real time (Kim& Silver, 2021). Classroom observation checklists are used to provide feedback during classroom visits (Halim et al., 2018). These checklists focus on how teachers apply CPoP and CCT in their lessons and allow for discussions and reflections on what is working well and what could be improved (Enochsson, 2018; Guskey, 2002; Lavigne & Good, 2015). Inaddition to classroom observations, focus group discussions continue to play an essential role in this phase. Teachers participate in regular reflection sessions where they discuss their classroom experiences, share challenges, and receive feedback from their peers and the facilitator (Lofthouse et al., 2010). This phase emphasises supporting continuous learning rather than evaluating teachers' performance. The feedback from these sessionsallows teachers to adjust and improve their practices throughout the program.

Assessment and **evaluation** take place at the end of the program, with the assessment focusing on the outcomes while the overall success of the TPL intervention is evaluated. This stage reflects on the teachers' learning outcomes and the impact on students' learning through focus group discussions and reflection using rubrics. The CCT rubric (explained in the next section) serves as a tool to reflect on how students' CCT skills improve in responseto changes in their teachers' pedagogical practices (Brookhart, 2013). The final reflection session serves to assess the long-term impact and sustainability of the program. Teachers reflect on their learning, discuss the challenges and enablers they encountered, and plan how to sustain the use of CPoP and CCT in

their classrooms going forward (Lieberman & Miller, 2001).

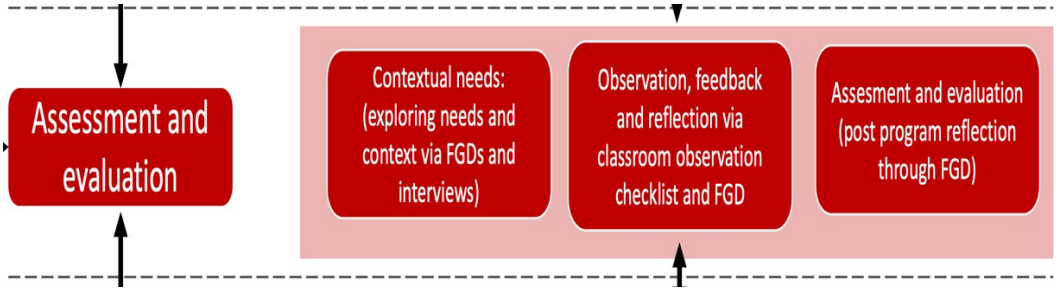

Figure 3.11 Stages of assessment

The learning outcomes of this model, as shown in Figure 3.12, reflect changes in both teachers and their students, particularly in terms of their understanding and implementation of CPoP and CCT (Guskey, 2016). These outcomes result from teachers actively engaging in the TPL process and demonstrating meaningful learning through continuous reflection. The integration of CPoP and CCT is designed to enhance teachers' ability to promote CCT in their students, ultimately leading to improved student involvement and learning performances. A key indicator of success in this model is how participants applied their learning to their professional practice.

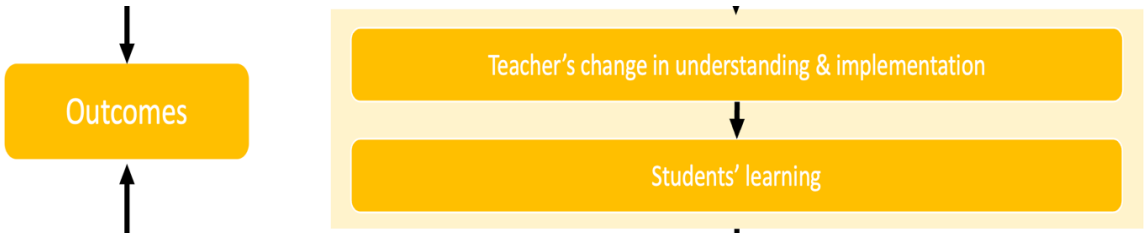

Figure 3.12 The outcomes of teacher professional learning

Ongoing professional growth in my TPL program, as shown in Figure 3.13, refers to the continued development of teachers' practices and their engagement in reflective and collaborative learning even after the formal intervention (Fraser et al., 2007; Kennedy, 2014b). This study focused on how participants' teaching practices evolve and are supported through the creation of a CoP, encouraging a purposeful, learner-centred, and collaborative environment aimed at continuous growth.

In this program, the focus group discussion provided a space for teachers to reflect on their understanding of CPoP and CCT and share experiences. Following the formal focus group discussion, continuous communication with 12 teachers allowed for ongoing reflections and updates on their classroom practices. This informal communication during the research period provided valuable insights into how teachers applied and refined the CPoP strategies in their teaching.

Lave and Wenger's theory of CoP (Wenger, 1998) emphasises the importance of social learning

within a community. Although the formal engagement was limited, the ongoing communication between the participants as well as with me as facilitator helped to foster a sense of community among teachers, where they could share their experiences and challenges (Francois van, 2018). This reflects the potential for ongoing professional growth as teachers continue to adapt and improve their practices based on the collaborative learning environment established during the program (Agusta & Kristiawan, 2021; Fraser et al., 2007; Kennedy, 2014b). While this occurred during the program's duration, the structuresput in place, such as the community of practice (CoP) and continuous communication, were designed to support sustainable growth even after the formal program had ended.

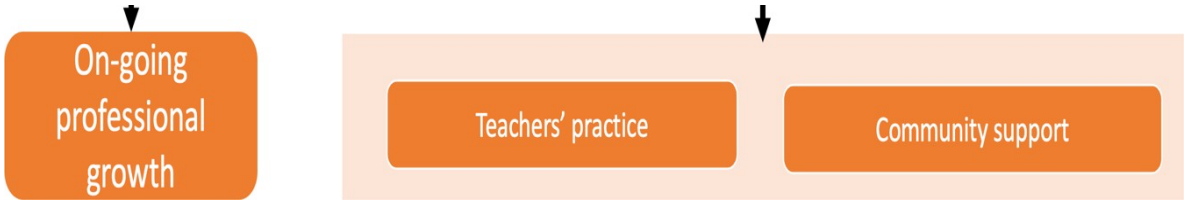

Figure 3.13 The ongoing professional growth of a community of practice

I incorporated Moon's stages of learning model (1999) to reflect the teachers' learning in mystudy (see Figure 3.14). In the noticing stage of the TPL program, teachers were focused on becoming aware of and attending to key concepts such as CCT and CPoP. At this early stage, teachers were introduced to new and unfamiliar terms such as decolonization and reinhabitation. Since these concepts were not previously part of their vocabulary, memorising key terms became an important step in ensuring that teachers couldbuild a basic understanding before engaging in deeper learning. Memorisation at this stage served as a foundation, giving teachers the terminology they needed to begin recognising the significance of these ideas. As the facilitator, I directed the teachers' attention towards the most relevant aspects of the new material, ensuring they began to recognise how CPoP and CCT could be integrated into their teaching practices. According to Moon (1999), what learners notice is influenced by factors such as their existing knowledge, emotional state, and the perceived relevance of the material. Therefore, my guidance focused on helping teachers identify connections between the new ideas and their existing pedagogical frameworks. At this stage, the goal was not yet deep engagement but to lay a foundation of awareness by highlighting the significance of CPoP and CCT. I aimed to bring key elements to their attention through examples and discussions, helping them notice how these concepts could be applied in their classrooms. This process ensured that the teachers clearly recognised the most important aspects of the material, setting the stage for deeper learning in subsequent phases.

Once teachers had familiarised themselves with the new information, they moved into the making sense stage, where they began to organise and structure the material through discussions and reflections (Ketelaar et al., 2014). In this stage, teachers started rearranging and making sense of the key concepts of CPoP and CCT, exploring how these new ideas might align with or challenge

their teaching practices. As the facilitator, I encouraged teachers to actively participate with the material, helping them to reorganise and arrange thenew information in ways that made it more coherent and relevant to their own contexts (Razetti, 2019). Teachers began to see how CPoP and CCT could be applied in their classrooms. Still, their understanding remained at a surface level, as they focused primarily on organising ideas rather than fully integrating them into their teaching practices (Moon, 1999).

At this stage, teachers began to make sense of the material by linking it to specific classroom scenarios. For example, they discussed how CPoP's emphasis on connecting students to their local environments could fit into their lesson plans. Similarly, they started to explore how CCT could encourage students to think critically and creatively within their subjects. However, this engagement was still largely surface-level, as it focused on organising the information and making basic connections without delving into deeper critical reflection or integration into broader educational frameworks (Moon, 1999). This process was essential in helping teachers move from mere awareness of new concepts to organising and making sense of the material, setting the foundation for more profound learning insubsequent stages (Razetti, 2019).

The next stage, making meaning, marked a significant shift where teachers began to challenge existing assumptions and actively transfer the new information to broader teaching practices. In this stage, teachers started to question how CPoP and CCT could reshape theirclassroom approaches, reflecting on how the new knowledge challenged their previous beliefs about teaching and learning (Ignelzi, 2000). As the facilitator, my role was to prompt deeper reflection through questions such as, *how does this new understanding change your approach to teaching?* And *what assumptions are being challenged by this new knowledge?* These reflective discussions helped teachers move beyond surface-level applications and reframe their thinking, actively transferring the new ideas to real-life teaching scenarios (Enochsson, 2018; Mezirow, 1991). At this stage, teachers started connecting CPoP and CCT to their existing classroom challenges, actively considering how these new concepts could foster deeper critical thinking among their students. Then, they created lesson plans for implementing CPoP and CCT in the classroom, demonstrating their ability to transfer theoretical concepts into practical classroom strategies. This stage of making meaning represents a deeper understanding of the material, where teachers actively link ideas together, creating a more well-integrated and meaningful approach to their teachingpractice (Mezirow, 1991; Moon, 1999).

In the working with meaning stage, teachers began to refine the new ideas they had developed through repeated cycles of reflection. This stage required teachers to experiment with and adapt the new strategies in their classrooms, consistently revisiting and improving their use of CPoP and CCT (Moon, 1999; Xie et al., 2008). Although the reflective process was collaborative and encouraged self-assessment, my role as the facilitator also involved providing feedback based on

classroom observations. After observing their classroom practices, I offered explicit input to help teachers refine their implementation of CPoP and CCT. This feedback was essential in guiding teachers to correct misunderstandings and enhance their approaches to better align with the principles of CPoPand CCT (Xie et al., 2008). By offering guidance, I helped ensure that teachers' reflections led to meaningful improvements in their practice rather than reinforcing incorrect interpretations of the new strategies.

While teachers reflected on their own experiences and shared insights with their peers, my feedback helped them assess their application of CPoP and CCT. I encouraged them to explore what was working and could be improved, promoting a continuous cycle of reflection and feedback. This approach allowed teachers to refine their practices based on both their own reflections and the explicit guidance I provided during classroom observations. By engaging in these ongoing reflections—supported by feedback from their peers and myself—teachers developed a deeper understanding of implementing CPoP and CCT in their classrooms. This combination of reflection and guided feedback helped teachers build confidence in adapting the new strategies to their unique classroom contexts. As a result, teachers made meaningful improvements in their teaching, leading to a more sophisticated understanding of how to foster CCT among their students (Xie et al., 2008).

Finally, in Moon's (1999) theory, transformative learning represents a stage where teachers experience a fundamental shift in their thinking and practice. At this stage, teachers moved beyond simply creating lesson plans to fully applying CPoP and CCT in a way that transformed their overall approach to teaching. Instead of viewing these concepts as separate strategies, teachers began to see them as core elements that shaped how they approached every aspect of classroom instruction. This shift was evident in how teachers embedded CPoP and CCT into their daily teaching practices. They integrated local, context-based learning into their lessons and prioritised student engagement and CCT in classroomactivities (Guenewald & Smith, 2014; Kelley & Pelech, 2019).

As the facilitator, my role in this stage was to continue fostering reflection and collaboration, allowing teachers to discuss how their teaching practices had evolved and how they applied CPoP and CCT in their classrooms. Teachers shared how they modified classroom routines,integrated open-ended questions, and emphasised CCT in their pedagogy. These discussions helped teachers consolidate their learning and develop strategies to sustain these changes in their teaching.

During this stage, teachers focused on applying and refining their new teaching strategies, observing how students responded to these changes and making adjustments based on classroom experiences. Teachers actively reflected on the immediate effects of their new practices,

discussing how students were engaging with the material and demonstrating CCT in the classroom. These reflections allowed teachers to adapt and improve their approachescontinuously. Unlike earlier stages, where teachers were still experimenting with new ideas, the transformative learning stage involved a more consistent and sustained application of CPoP and CCT. Teachers were no longer just planning or trying out new strategies; they were integrating these concepts into their everyday teaching and reflecting on their classroom experiences to ensure these changes became a lasting part of their pedagogy.

Thus, transformative learning in this context represents a stage of continuous application and reflection, where teachers move beyond experimenting to fully incorporating CPoP and CCT into their teaching practices. This reflective process and ongoing classroom application ensured that the transformation was meaningful and sustained over time.

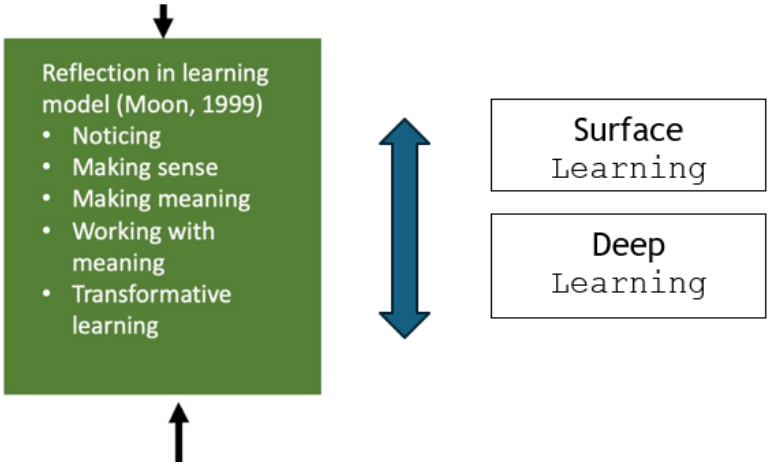

Figure 3.14 Moon's stages of learning

My TPL model is interconnected, with continuous feedback between stages. The insights from the implementation and assessment stages feed back into the input phase, allowing meto refine and adjust my plans based on teachers' experiences. The outcomes inform ongoing professional practices, which in turn influence future implementations. Based on feedback and my reflection, my TPL program evolves, adapts and improves. My TPL program model is a structured approach to TPD. It emphasises context-specific planning, active implementation, continuous assessment, reflective practice and community support. By integrating these elements, I aim to create a sustainable and impactful professional learning experience that enhances teaching quality and improves student learning outcomes.

3.4 Model of critical and creative thinking assessment rubric

My model of the CCT assessment rubric through CPoP is designed to evaluate students' thinking skills, particularly their social and environmental awareness and ability to establish meaningful relationships with their local context and community. This assessment rubric evaluates students'

cognitive abilities and their capacity to engage deeply with real-life problems, demonstrate empathy and collaborate effectively with peers and community members, as well as provide feedback for the teachers.

The rubric emphasises the importance of context in learning, ensuring that students' educational experiences are relevant and grounded in their local environments. This emphasis aligns with recent educational research that highlights the significance of PBE in developing CCT skills (Cincera et al., 2019; Vander Ark et al., 2020). Moreover, the rubric isdesigned to encourage students to build strong connections with their communities through learning. The teacher assesses students' ability to understand and appreciate their local environment and culture, promoting a sense of responsibility and active citizenship. By engaging with community issues and collaborating on projects that benefit their surroundings, students can contribute positively to their communities (Gruenewald, 2003b;Waller & Barrentine, 2015).

The following rubric is divided into Table 3.1 and Table 3.2, outlining the criteria for observing CCT through CPoP. The tables provide detailed descriptors for each level of engagement, serving as a guide for teachers to observe and understand how students aredeveloping CPoP and CCT capacities in meaningful and contextually relevant ways.

Teachers are urged to use the rubric as a reflective tool during and after classroom activities, helping them observe students' progress and recognise areas for further improvement. The teacher used the rubric to get constructive feedback and inform their teaching strategies in order to better nurture CCT in the classroom. Through this reflective use, teachers can remain responsive to their students' evolving needs, ensuring that CPoP and CCT are effectively integrated into the learning experience.

The rubric focuses CCT capacities on two aspects: "social and environmental awareness" (Gruenewald, 2003a, p. 9) and nurtures meaningful connections with the local context and community (Gruenewald & Smith, 2014; Sobel, 2004). The criteria cover various aspects important for the development and evaluation of CCT within the framework of CPoP. The rubric differentiates between different levels of proficiency and encourages a comprehensiveapproach to learning that includes local issues and cognitive, social, and emotional dimensions. Using specific, actionable descriptors helps identify the current level students are at. Some criteria were adapted from the elements of analysing CCT in the Indonesian context based on references from the *Merdeka* curriculum (Kemendikbudristek, 2022; ACARA, 2012; Combs et al.,2009, combined with CPoP or PBE (Greenwood, 2008; Gruenewald & Smith, 2014; Häggström & Schmidt, 2020b; Martin, 2010; Sobel, 2004). Criteria such as pose questions, problem-solving, and critical reflection are derived from the *Merdeka* curriculum (Kemendikbudristek, 2022), ACARA (2012), and Combs et al. (2009). I also consider empathy, place awareness, and collaboration to be essential components

of PBE, based on literature from Häggström and Schmidt (2020b), Gruenewald & Smith (2014), and Sobel (2010).

Table 3.1 Critical and creative thinking through critical pedagogy of place (social & environmental awareness)

Criteria	Needs Improvement (1)	Satisfactory (2)	Excellent (3)	Notes
Pose Questions	Rarely or never asks questions without prompting and guidance.	Asks questions relevant to the topic	Asks questions that demonstrate deep understanding and high relevance to the topic.	**Deep Understanding:** Relating new information to prior knowledge, explaining concepts, and applying knowledge in new contexts. **High Relevance:** Asking topical questions, understanding the importance, and recognising the impact of the topic.
Observational Skills	Using prompts to observe or describe the environment and community.	Observes general information and provides basic descriptions with detail.	Observes in detail and provides unique insights related to the environment and community.	**Detailed Observations:** Noticing and describing multiple aspects of the environment with specificity. **Unique Insights:** Offering original or perceptive observations that go beyond the obvious. Examples: noticing patterns in nature.
Creative Expression	Needs assistance to express ideas creatively.	Demonstrate creativity through an appropriate form to express ideas.	Uses various forms of creative expression to uniquely engage others and convey understanding and ideas in an appealing manner.	**Creative Methods:** Using different mediums (e.g., drawing, storytelling, role-playing) to express ideas. **Effective Expression:** Clearly communicating ideas in an engaging and appealing manner.

Criteria	Needs Improvement (1)	Satisfactory (2)	Excellent (3)	Notes
Problem Solving	Offer solutions with guidance.	Offers practical solutions.	Produces innovative solutions independently.	**Practical Solutions:** Solutions that are useful and applicable to the problem at hand. **Innovative Solutions:** Solutions that are creative, feasible, and have a measurable positive impact. Students should explain their problem-solving process and rationale. Example: noticing patterns in nature.
Collaboration/Teamwork	Started building collaboration with peers and requires guidance.	Able to collaborate with peers.	Actively participates, contributes ideas in collaboration with peers.	**Building Collaboration:** Beginning to work with peers, sharing ideas and tasks. **Effective Collaboration:** Actively participating, contributing ideas, and helping the group achieve its goals.
Empathy	With prompts shows care to others.	Recognise emotions and show care to others	Responding appropriately to others' emotions, offering support or comfort.	**Recognising Emotions:** Identifying when others are happy, sad, angry, etc. **Showing Care:** Responding appropriately to others' emotions, offering support or comfort.

Criteria	Needs Improvement (1)	Satisfactory (2)	Excellent (3)	Notes
Different Perspective	With prompts recognising different viewpoints	Recognising and respecting different viewpoints	Using different viewpoints to enhance understanding and decision-making.	**Appreciating Perspectives:** Recognising and respecting different viewpoints. **Incorporating Perspectives:** Using different viewpoints to enhance understanding and decision-making.
Connection with Community & Environment	Recognising knowledge and actions that benefit the community or environment.	Connects knowledge with the community or environment.	Able to integrate knowledge with actions that enhance the community and environment.	**Connecting Knowledge:** Applying what is learned in the classroom to real-life situations. **Enhancing Community/ Environment:** Taking actions that positively impact the local community or environment.

Table 3.2 Critical and creative thinking through critical pedagogy of place (meaningful relationship with local context and community)

Criteria	Needs Improvement (1)	Satisfactory (2)	Excellent (3)	Notes
Place Awareness	Recognises basic elements of the local environment, such as the nearest school, football yard, or familiar building.	Identifies and describes some main features in the environment, such as school, home, and natural elements (trees, rivers).	Identifies and explains the importance of these local features, sharing personal stories or connections.	
Critical Reflection on Local Issues	Expresses simple concerns about their surroundings, such as rubbish in the playground or a broken door.	Shares personal observations about problems affecting the environment and suggests basic ideas for improvement.	Provides in-depth explanations about issues in the community and offers practical ideas for solutions.	
Generating Creative Solutions	Suggests simple ideas that may not fully solve local challenges, such as “clean up all the trash.”	Generates several creative solutions, like organising a class clean-up or planting flowers.	Creates innovative and practical solutions involving several activities or projects, like a recycling campaign.	
	Participates in class or group discussions but needs guidance to stay focused or contribute ideas.	Shares ideas with classmates or family, helping to plan activities or projects with support.	Proactively collaborates with classmates or family to design and implement projects that help the local environment or community.	1. Teachers communicate with the family to find out project implementation 2. Students’ self reporting
Action-Based Application	Needs guidance to apply ideas to projects, showing limited understanding of necessary steps.	Understands project steps and apply ideas to real projects	Understands project steps, applies ideas well, and effectively participates in group activities or projects.	

The social and environmental awareness aspect in the rubric presented eight criteria as follows:

1. Pose questions

   Effective questioning is a cornerstone of critical thinking. Questioning stimulates thought, encourages exploration, and promotes deeper understanding (Elder & Paul, 2010), specifically,questions that relate to the place we are living in (Greenwood, 2009; Martin, 2010). The progression from needing guidance to independent, relevant questioning mirrors the developmental trajectory of cognitive skills (Shanmugavelu et al., 2020).

2. Observational skills

   Observational skills are vital for environmental awareness (Eberbach & Crowley, 2009; Gruenewald & Smith, 2014). Vygotsky (1978), supported by other researchers (Cappelle et al., 2023; Klofutar et al., 2020), emphasised the role of observation in learning, as it stimulates curiosity and attentiveness, for example, how learners notice details in their surroundings to recognise social and environmental issues such as bullying, pollution, deforestation, poverty and so on. Connecting this to the purpose of my research, which is to provide detailed and insightful observations, indicates a deeper connection and understanding of the environment (Stansberry etal., 2023).

3. Creative expression

   Research shows that creative expression is integral to learning, allowing students to convey understanding uniquely and encouraging imagination and better communication (Jamwal, 2019; Jean-Berluche, 2024). Some theories posit that creativity involves fluency, flexibility, originality andelaboration (Beghetto & Kaufman, 2022; Dow, 2021; Skalicky et al., 2017). The rubric's progression reflects these dimensions. Creative expression can take any form, such as visual, performance or literature (Saputri & Yuwono, 2022; Gruenewald & Smith, 2014). The purpose of implementing CPoP is to stimulate CCT by engaging students with their local environment and community. Creative expression plays a critical role in this process by allowing students to understand and represent their place in ways that are meaningful to them.

   For Grade 1 students, an activity could involve drawing pictures of things they notice on a short walk around the school grounds, such as trees, birds or playground equipment. After the walk, students can use crayons to draw what they saw and add their own creative touches, like identifying art elements or patterns such as lines, shapes, colours, and textures. Or they could make up a story about a bird that lives in that tree. They can share their stories with the class, which helps them articulate their observations and connect them to creative

narratives. Drawingand storytelling allow them to express their observations creatively, helping them grasp and appreciate their environment. It also encourages them to see their immediate surroundings as interesting, inspiring and important, which aligns with CPoP's goal of building a meaningful relationship with their local context.

4. Problem-solving

Problem-solving is a critical component of CCT (Naeyc, 2011; Snyder & Snyder, 2008). Effective problem solvers understand the problem, generate alternatives, and implement solutions (Brooks,2022). The rubric (Table 3.1 and Table 3.2) differentiates between levels of problem-solving proficiency. Learners should show problem-solving in relation to issues with their surroundings/places (Stansberry et al., 2023). The purpose of implementing CPoP is to enhance student's ability to critically engage with their local environment and community, developing both their social and environmental awareness. Problem-solving within this context allows students to apply their CCT skills to real-life issues in their surroundings.

For example, a problem-solving activity might involve identifying an issue in their schoolyard, suchas a lack of flowers or plants in the garden. The teacher could guide students to observe the garden, identify problems in the garden, for instance, not having many plants and flowers, discusswhy having more plants and flowers could be beneficial (e.g. attracting butterflies or bees, beautifying the space), and then brainstorm solutions. Students might suggest ideas like planting flower seeds, asking their families to donate plants, or creating a watering schedule. By implementing one of these solutions, students develop connections with their immediate environment and engage in problem-solving, reinforcing the goals of CPoP by making their surroundings more meaningful and cared for.

5. Collaboration/teamwork

Collaboration is essential in CCT, promoting collective problem-solving and creativity (Tang et al., 2020) The importance of cooperative learning in developing interpersonal skills and achieving common goals has been emphasised by many scholars (Buchs et al., 2021; Butera & Buchs, 2019;Gillies, 2014; R. M. Gillies, 2016). Working collaboratively is often necessary in solving place- based issues (Howard & Kern, 2019). In the context of CPoP, collaboration helps students work together to address local environmental or community issues, learning the value of teamwork in solving real-life problems.

For example, after the students identify the problem in relation to the issue in their school yard such as a lack of flowers or plants in the garden, they work together in brainstorming the solution and making the solution work.

6. Empathy

   Empathy is crucial for social awareness and ethical reasoning (Gruenewald, 2003a; Sobel, 1996).Empathy shows action for understanding others and nurturing positive relationships. (Husain, 2021; Mariadhas, 2019). For example, students might notice that some of their classmates have different resources, like books or school supplies, at home. The teacher could initiate a discussion about how it feels not to have what you need for school and why it is important to help others. The class could then organise a small sharing corner where students can bring extra supplies from home to share with those needing them. This activity helps students develop empathy by recognising and responding to the needs of their peers, fostering a supportive and caring classroom community.

7. Different perspective

   Appreciating different perspectives is fundamental to critical thinking (Dekker, 2020). Recognisingmultiple viewpoints enhances understanding and fosters critical reflection (Ajaps & Forh Mbah, 2022; Brookfield, 2012). In the context of CPoP, recognising multiple viewpoints helps students understand their community better, raising respect for diverse ideas and cultural practices.

   Grade 1 students could explore different ways people in their community celebrate local festivals ortraditions. The teacher could show a video on how people in different regions celebrate a certain local tradition. The teacher could then invite students to reflect and share their experiences from their community. This helps students understand and appreciate the diversity within their environment, encouraging more views of their community.

8. Connection with community and environment

   Connecting knowledge to the community and environment is essential in CPoP (Comber, 2015; Gruenewald & Smith, 2014). PBE fosters meaningful connections and practical applications, promoting environmental stewardship and community engagement (Comber, 2014; Gruenewald &Smith, 2014). After a lesson about plants and their role in the environment, Grade 1 students can participate in a planting project. The class could plant seeds or other plants in pots. Each student would be responsible for caring for a plant, watering it, and observing its growth. Over time, they can discuss how their efforts contribute to a greener environment. Students could invite their families to donate extra plants to the school garden or public places such as places of worship andcommunity centre buildings. This activity helps students see how their actions positively impact theenvironment and community, fostering a sense of responsibility and connection to their surroundings.

Further, the meaningful relationship between the local context and community is presented in the rubric based on five criteria outlined below.

1. Place awareness

   Place awareness refers to the understanding and recognition of important features within the localenvironment. It involves identifying, describing and explaining the significance of various elementsand locations in the community (Gruenewald & Smith, 2014).

   Developing place awareness helps students build a strong sense of connection to their local surrounding, fostering a sense of belonging and responsibility towards their community. PBE engages students in local heritage, culture, landscapes, and experiences to enhance learning (Gruenewald & Smith, 2008, 2014; Sobel, 2013). This criterion of the rubric aligns with fostering anintimate knowledge and personal connection to the local environment.

2. Critical reflection on local issues

   Critical reflection on local issues involves identifying, analysing, and thinking deeply about problems within the community (Bassachs et al., 2020; Zimmerman & Weible, 2017). It includesexpressing concerns, sharing observations, and suggesting solutions (Barnum & Illari, 2016).

   Encouraging critical reflection helps students develop analytical skills, promotes active citizenship,and empowers them to contribute positively to their community by addressing and solving local issues. The significance of critical reflection in education has been emphasised for a long time (Freire, 1970; Kincheloe, 2008). This rubric criterion encourages students to think deeply about local issues and consider their broader social and environmental implications (Gruenewald, 2003a).

3. Generating creative problem solving

   Generating creative problem-solving involves creating original and effective ideas to address localchallenges. This process includes brainstorming, developing, and implementing innovative solutions, focusing on the actions and strategies students use to solve problems creatively. It enhances students' problem-solving abilities, encourages innovation, and prepares them to tacklereal-life challenges imaginatively and effectively (Sawyer, 2022; Segundo Marcos et al., 2020; Tanggaard, 2015).

   Creativity in problem-solving involves four key dimensions: fluency (the ability to produce many ideas), flexibility (the ability to generate diverse ideas), originality (the ability to come up with unique solutions) and elaboration (the ability to expand on ideas with detail) (Beghetto &

Kaufman,2022; Litchfield et al., 2021; Sawyer, 2022). This criterion aligns with fostering these creative dimensions in students by encouraging them to think beyond the obvious and apply their creativityin practical, problem-solving contexts.

4. Collaboration and community engagement

   Collaboration and community engagement refer to working with others to achieve common goals and actively participating in activities that benefit the local environment and community (Hausburg, 2020). Collaboration and community engagement develop social skills, teamwork, and a sense of community, helping students to become active and responsible citizens who contribute positively totheir society (Hausburg, 2020; Hodson, 2011; Ramaley, 2016; Smith & Sobel, 2010). The benefits of cooperative learning in developing social and interpersonal skills are highlighted in the literature (Buchs et al., 2021; Butera & Buchs, 2019). This criterion of the rubric supports teachers in identifying the enhancement of social and interpersonal capacities through active participation and collaboration.

5. Action-based application

   The action-based application involves applying theoretical knowledge to practical projects. It includes understanding project steps, executing ideas, and effectively participating in group activities or projects. Action-based application bridges the gap between theory and practice, helping students to develop practical skills, understand real-life implications, and achieve tangible outcomes through their efforts (Bansal & Nagpal, 2015; Muliasari, 2016). Action-based applicationis a form of learning through experience (Asyari et al., 2021; Kolb, 1984). This rubric criterion aligns with fostering the practical application of knowledge by students through real-life projects.

Ultimately, the criteria in my assessment rubric sample are designed to assess and develop CCT through the lens of CPoP, emphasising the importance of social and environmental awareness and fostering meaningful relationships with the local community. By focusing on these areas, educators can assist students become thoughtful, engaged and proactive members of theircommunities. The TPL program is in combination with a CoP, and the model is designed to facilitate the teachers' learning. The integration of CPoP and CCT in TPL is designed to enhance teachers' pedagogical practices by grounding them in CCT with the local context. My combined model is operationalised through a CoP to facilitate collaborative learning among teachers, promoting their continuous professional growth and the application of innovative teaching strategies.

3.5 Conclusion

This chapter portrayed the conceptual framework combining the CPoP and CCT model within the

TPL program, supported by the principles of a CoP. The integration of these frameworks is essential for enhancing educational practices, specifically in Indonesian primary education, whereas comprehensive approach to fostering CCT was previously unavailable. The CPoP and CCT model I designed is adapted from Gruenewald's CPoP (2003), emphasising the significance of context and community in the learning process. By grounding education in specific geographical locations, cultural systems and community values, my model ensures that learning is relevant and connected to students' lived experiences. Integrating real-life problems into the learning process fosters meaningful and transformative educational experiences that involve students in critical reflection and creative problem-solving.

My model highlights the importance of lived experiences and the processes of decolonization and reinhabitation in the learning process. By involving students in activities that contest established norms and encourage new ways of thinking, the model promotes a deeper understanding and connection to their local environment and community. The emphasis on social and environmental awareness and building meaningful relationships with the community prepares students to become responsible and active contributors to the community. The integrated model is implemented through a CoP, enabling collaborative learning among teachers while fostering ongoing professional development and innovative teaching approaches.

The CCT assessment rubric through CPoP provides a structured approach to evaluating students' CCT capacities. My rubric (Table 3.1 and Table 3.2) emphasises social and environmental awareness and the ability to establish meaningful relationships with the local context and community. By providing detailed descriptors for different levels of achievement, the rubric functions as a guide for teachers to assess and support the development of these capacities in students.

The conceptual framework presented in this chapter (Figure 3.1) provides a comprehensive and contextually relevant approach to fostering CCT in students. By integrating CPoP and CCT within the TPL framework and supported by CoP, my TPL model provides the conceptual framework to guide the teacher's teaching, learning and assessment, addressing theneed for practical strategies to enhance educational practices and improve student learning outcomes. The next chapter will detail the research methodology employed to examine the implementation and impact of my TPL model. It will outline the research design, data collection methods, participants, data analysis procedures and ethical considerations.

CHAPTER 4: METHODOLOGY

4.1 Introduction

My study explains 12 teachers' experiences of TPL and the implementation of CPoP in primary schools in BMA: two schools in the south, two in the east, five in the north and three in the west. The TPL promoted changes from the traditional teaching described in Chapter 1 to focus on the student's active engagement in their learning and their awareness of the connection to themselves, the people around them and their environments. In this chapter, I describe the methodology of the study, starting with the research design and continuing with the research's setting and the participants, and then *how* and *why* data were collected and analysed.

4.2 Research design

This section details the research design, including its ontology and epistemology, its qualitative nature, CPoP, action research (AR) and TPL components, and my role as the researcher.

4.2.1 Ontology and epistemology of the study

In this study, I adopted pragmatic social constructivism as the guiding philosophical framework. This approach merges the collaborative knowledge construction of social constructivism with the practical orientation of pragmatism (Garrison, 1998a; Kaushik & Walsh, 2019). This perspective aligns with my conviction that knowledge is developed through social interactions and gains significance through its application in real-life contexts (Chang, 2018; Creswell, 2013). Therefore, each human experience is unique and socially shared, meaning there are different degrees of shared beliefs and no universal truths (Kaushik & Walsh, 2019; Morgan, 2014). In relation to this study, all teachers were engaged in building connections to their lived experiences, sharing values, and learning by doing through real-life applications of CPoP. This process involved developing awareness of our environments as the context within which we were learning and enacting learning, and sharing the teachers' experiences with the community to foster CCT.

Ontologically, I am drawn to the concept that reality is not a static, singular construct but is instead moulded and remoulded by human interactions and contextual experiences (Zydney et al., 2012). Ontology pertains to the essence of reality and encompasses the assumptions regarding the kinds of entities that exist and the nature of their existence (Crotty, 1998; Kivunja & Kuyini, 2017). Reality is considered as a dynamic process that continuously alters depending on the context and individuals' interactions within the communities in collaborative work (Kivunja & Kuyini, 2017). In the diverse school environments where this study takes place, I see reality as something that teachers collaboratively construct as they engage with CPoP. My belief is that there is no single,

universal method for nurturing CCT; instead, each teacher's journey with CPoP contributes to rich practices that reflect their unique contexts and experiences (Kaushik & Walsh, 2019). This diversity of realities underpins my understanding of how CPoP can be interpreted and implemented in diverse ways.

Epistemologically, I hold that knowledge emerges from active participation and collaboration. In line with pragmatic social constructivism, I view knowledge not as an absolute truth but as something continually refined through its practical application in a specific context (Kaushik & Walsh, 2019). Based on my conviction of the subjectivity of knowledge creation and meaning-making, I have chosen a qualitative approach for this CoP AR, where the researcher plays a pivotal position. This approach, sometimes referred to as *researcher as the instrument* (Creswell & Guetterman, 2018; Lapan et al., 2012; Tracy, 2013), recognises that the process of meaning-making is naturally subjective, with data being interpreted through the researcher's lens and influenced by their experiences and interactions within the research setting (Kivunja & Kuyini, 2017).

Building on the philosophical underpinnings of pragmatic social constructivism, this study adopted interpretivism as its theoretical framework. Interpretivism aligns with the assumption that reality is subjective, multifaceted and socially constructed. According to Crotty (1998), the theoretical framework flows from the philosophical position of the research. Interpretivism emphasises understanding the meanings and experiences of individuals within their specific contexts, making it well-suited to my study. It involves investigating the lived experiences and practices of teachers in implementing CPoP to promote CCT, highlighting how they construct knowledge through social interactions and reflection.

The researcher understands the lived experiences from the view of those who live it and actively engage with the environment (Mertens, 2015; Schwandt, 2000). Therefore, in my research, knowledge is seen as a product of shared understanding and cultural practices (Berger & Luckmann, 1991), and learning itself is seen as a social and cultural process that occurs in the context of human relationships and experiences in real-life scenarios.

Interpretivism holds that knowledge is co-constructed through interaction between the researcher and the participants. It focuses on understanding the perspectives and interpretations of those involved in the research process (Mertens, 2015; Schwandt, 2000). In this study, I engaged with the teachers through interviews, focus group discussions and discussions about their reflections on the program sessions. These interactive methods were designed to facilitate the sharing of their experiences with CPoP and CCT. Throughout these engagements, we collaboratively explored how the teachers applied CPoP in their classrooms. The process was iterative, allowing for ongoing dialogue where initial interpretations were revisited and refined. The role of dialogue,

exchange of perspectives, shared experiences and reflection are the practical applications that help shape knowledge, and their relevance is found in how well these shared understandings align with the specific context (Garrison, 1995, 1998b; Morgan, 2014; Vygotsky, 1962).

By employing an interpretive approach, my study sought to capture the rich, contextualised understandings of teachers as they navigated and implemented CPoP in their classrooms. The focus was on the meanings they ascribed to their experiences and the methods in which they constructed knowledge through social interactions and reflection (Creswell & Poth, 2018). This approach facilitated an in-depth exploration of the intricacies and nuances of pedagogy and learning within specific educational settings, providing insights that informed and enhanced professional development and educational practices (Elliot & Lukes, 2018; Fusch, et al., 2020; Hammersely, 2018).

4.2.2 Qualitative research

My study employed a qualitative approach to examine the research question. This approach was essential for investigating and acquiring a comprehensive understanding of the teachers' perspectives during their professional learning journey, particularly in CPoP in primary schools. The research focused on how teachers engaged in learning to create classroom activities that fostered students' CCT. These activities aimed to enhance students' social and environmental awareness while promoting meaningful relationships with their local context and community. The qualitative approach was appropriate for this study, as it sought to comprehend the complex interactions between teachers and the social dynamics of TPL within their local school environments (Cropley, 2015; Merriam & Tisdell, 2016). Social dynamics in this context refers to how teachers interact, collaborate, and support each other during their professional learning.

These interactions play a significant role in shaping their learning experiences and how they apply new teaching strategies, such as CPoP, in their classrooms. By working together, sharing ideas, and overcoming challenges as a group, teachers can better understand how to adapt and implement CPoP in ways that are relevant to their local contexts. To capture the diversity and complexity of these experiences, it was necessary to collect in-depth descriptive and interpretive data. In order to understand the complexity of the range of the teachers' experiences and diverse contexts, it was necessary to collect in-depth descriptive and interpretive data (Creswell, 2018; Hancock & Algozzine, 2011; Stake, 2006) on the experiences of teachers during their involvement in TPL and their implementation of CCT in the early primary school setting.

4.2.3 Community of practice and action research

I employed an AR approach characterised by collaborative work with participants to facilitate the improvement of practice within educational contexts (Kidwai & Iyengar, 2017; Mackenzie et al.,

2012). Specifically, this research involved collaboration with 12 primary school teachers to explore new possibilities for social action as part of transformative learning through the implementation of CPoP. The teachers and researchers engaged collectively in a shared domain of professional endeavour, learning from each other through mutual engagement in shared practices (Ajaps & Mbah, 2022). This approach is in line with the concept of a CoP, which is formed by individuals who share a common concern and work together to develop new knowledge and best practices (Mercieca, 2017). A CoP emphasises learning as a social activity in which individuals acquire knowledge via interaction with others, sharing knowledge, and engaging in real-life contexts to enhance their professional practices.

Wenger-Trayner and Wenger-Trayner (2015) identify three critical characteristics of CoP that feature in my research: domain, community, and practice. The *domain* means that the CoP I adapted had an identity and a focus defined by a common domain of interest. The *community* was formed as members of the research engaged in collaborative endeavours and discussions, assisting one another and exchanging information to pursue their interests and understand how to apply a CPoP approach (Mercieca, 2017). The *practice* refers to members of the CoP as practitioners sharing a practice – teachers and their teaching. As part of the TPL, the participants of this study developed a collective array of resources: experiences, narratives, instruments, and methodologies for tackling persistent issues - a communal practice.

CoP shares much in common with AR, and they are frequently used together (Harvey & Fredericks, 2017). Both CoP and AR require the active participation of those being studied, drawing on the participants' knowledge and experiences. Central to both approaches is the focus on empowering teachers, fostering their agency and raising their consciousness to engage in teaching practices that often differ from conventional methods (Harvey & Fredericks, 2017). In doing so, participants are encouraged to reflect on their practices, engage in transformative learning and implement new approaches to teaching. This iterative cycle of reflection and action is a key element of AR, where teachers put their learning into practice, creating a process of continuous improvement (Kemmis et al., 2014). My study positioned the teachers as partners since they would contribute their knowledge and experiences to the study (Heron & Reason, 1997; Neufeldt & Janzen, 2020). Research shows that AR, although usually conducted individually, can also be a collaborative effort when a group of practitioners conduct research (Efron & Ravid, 2013). Therefore, the rationale for using a CoP in conjunction with AR lies in the ability to combine the strengths of collaborative and practice-based community learning with a systematic, reflective approach to bringing about change. Figure 4.1 represents the research structure based on Melnikovas' (2019) research onion model (p.33).

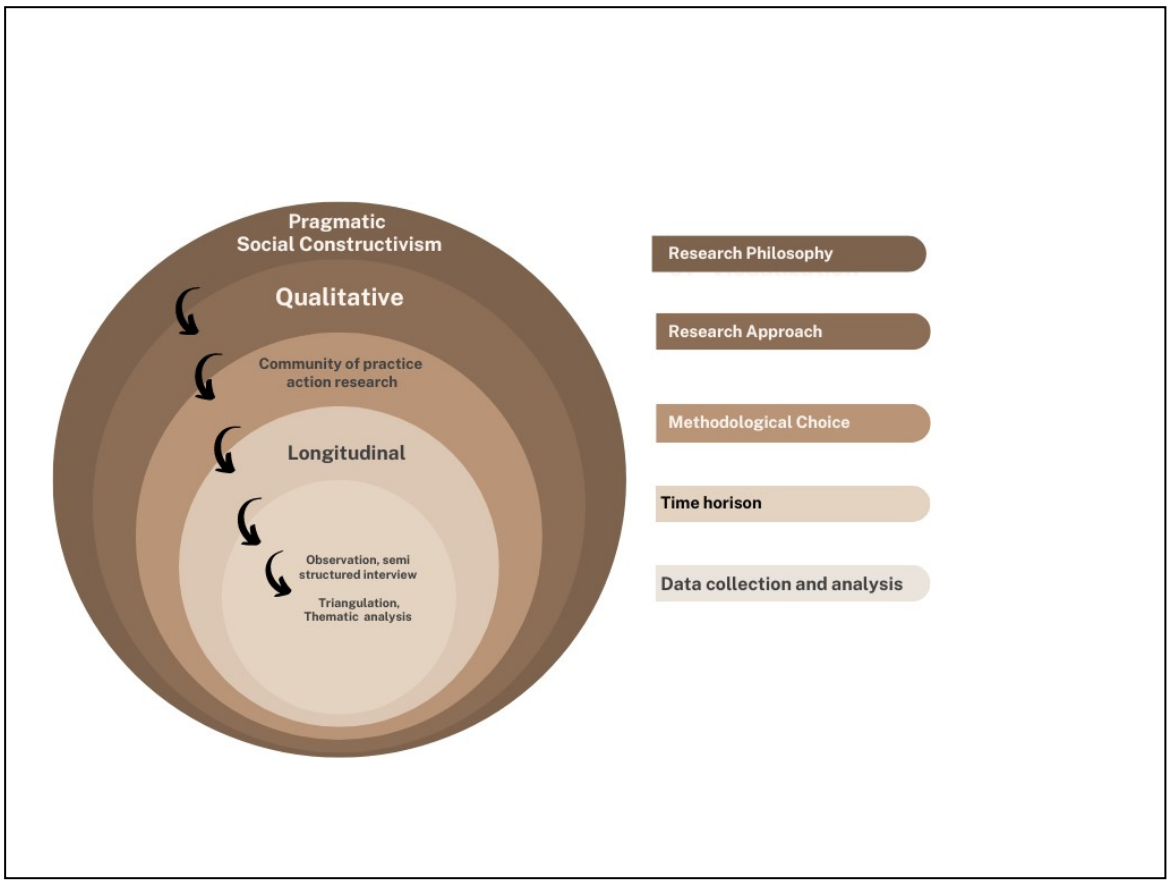

Figure 4.1 The research structure

This integrated CoP and AR or “community-based participatory AR” (Burns et al., 2011; Wilson, 2019) or participatory AR (Huffman, 2017) approach is grounded in the understanding that meaningful and sustainable change is best achieved through participatory, reflective and community-based processes (Yıldırım, 2008). The characteristics of community-based participatory AR involve stakeholders from a particular community working together to identify challenges, implement solutions, and reflect on outcomes (Kemmis et al., 2014). In my study, the community consisted of teachers at primary schools who were introduced to a new national *Merdeka* curriculum – centred around CCT – which posed a significant challenge to them. The shift to a new curriculum revealed tensions between existing pedagogical beliefs, pedagogical practices, what is valued and the attitudes towards the new demands (Martin et al., 2002). The combination of a CoP and AR was employed as a framework to help teachers navigate these tensions, facilitating reflection and collaborative problem-solving (see Figure 4.14 in Section 4.10)

AR, especially in its community-based and participatory forms, complements the CoP model by promoting active engagement and iterative cycles of action and reflection (Kemmis et al., 2014) in real settings, in which challenges are continuously identified and addressed through a collaborative process. This iterative approach enabled the teachers to progressively refine their pedagogical practices, aligned with the principles of CPoP and CCT. AR's cyclical nature also allowed teachers to engage in continuous professional learning as all participants continuously observed and reflected upon problems and solutions (Novianti, 2023).

Although AR is ideally an ongoing process, in this study, two complete cycles of AR were conducted, allowing for a meaningful process of planning, acting, observing, and reflecting. These cycles were essential for teachers to start refining their practices in relation to CPoP and CCT. The collaborative environment created through the CoP further supported their learning by fostering the sharing of experiences and the development of contextually relevant solutions. The characteristics of my research align with the participatory AR principles of Kemmis and McTaggart (1988, 2005, 2014), particularly in terms of active collaboration with the research participants and prioritising local knowledge and contextual factors that are ideal for bridging theory and practice (Huffman, 2017). Figure 4.2 illustrates the iterative cycles of my study adopted from Kemmis and Taggart (2005).

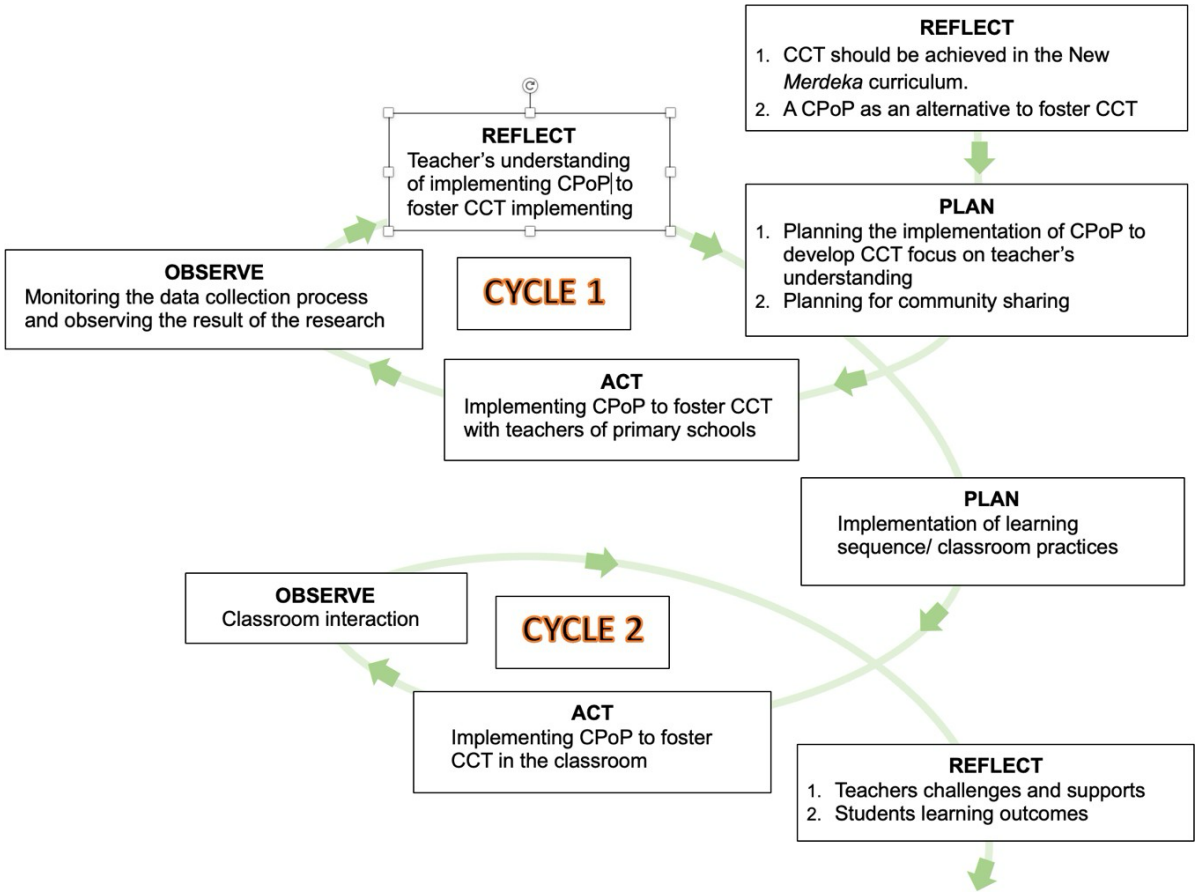

Figure 4.2 Action research cycles

Similar to traditional AR, the AR process in my study followed a cyclical model that consisted of four primary stages: planning, acting, observing and reflecting (Kemmis & McTaggart, 2005). The cycle consisted of four stages (details of the material shared are presented in Table 4.1), as explained in the sections below.

4.2.4 Cycle 1: Teachers' conceptual understanding

Reflecting on the current educational landscape in Indonesia, particularly with the introduction of the *Merdeka* curriculum, I recognised that teachers needed to be able to develop students' CCT. My exploration of the literature, coupled with insights from a visit to a school in Australia and discussions with an Indonesian scholar experienced in PBE, led me to identify CPoP as an alternative approach to teaching and learning.

Planning: During the planning stage, I collaborated with the teacher participants to identify their understanding of CCT and the *Merdeka* curriculum. Together, we identified gaps in their knowledge of CCT and CPoP and areas where professional learning was needed. I shared my research interest and findings from the literature review and insightful experiences with the teachers to confirm the alignment between my research interest and their need to enhance their understanding of the *Merdeka* curriculum and CCT. Recognising that some schools were still using the K13 curriculum while others were transitioning to the *Merdeka* curriculum, I tailored the TPL program to accommodate these differences. This ensured that all teachers, regardless of their school's curriculum stage, could benefit from the program by focusing on concepts applicable to both curricula. The information gathered from these initial interactions informed the development of community-sharing sessions that aimed to build teachers' understanding of CCT and CPoP and how these could be integrated into their classroom practices within the curriculum context.

Additionally, I also familiarised myself with the teaching practices, classroom and school environment, and interactions between teachers and students through a school visit and classroom observations. These initial interactions helped us co-develop a plan for the community-sharing sessions, focusing on building teachers' understanding of CCT and CPoP, as well as their connection to the curriculum. A TPL program was designed to introduce the core concepts of CPoP and demonstrate how these principles could be applied to support CCT in students.

Acting: The community-sharing sessions served as a collaborative platform where knowledge and materials on CPoP and CCT were exchanged to enhance teachers' understanding of these concepts. While I introduced the CPoP and CCT integration model, the teachers contributed their expertise in primary school education practices, ensuring a rich exchange of knowledge. For instance, during one of the sessions, the teachers engaged in a simulation of a grade 1 mathematics lesson on measurement. Teacher Y demonstrated how to introduce non-standard measurement units like spans and footsteps in an interactive "Measuring Detectives" activity. This practical demonstration allowed the group to visualise how CCT principles could be applied in a real classroom setting.

Following the simulation, the teachers participated in a feedback session, where they shared ideas for improvement. Teacher A suggested using a checklist to facilitate better observation and

evaluation of students' understanding during the activity. At the same time, Teacher N proposed adding a reflection session at the end, where students could discuss the challenges they faced during the activity. This collaborative dialogue highlighted how different teaching strategies couldbe refined to better integrate CPoP principles and encourage CCT among students.

These interactive sessions, which included focus group discussions, simulations, and feedback, not only deepened the teachers' understanding of CPoP and CCT but also encouraged them to reflect on and enhance their own teaching practices. By sharing their practical experiences and collaboratively refining lesson plans, the teachers developed a more comprehensive understanding of how CPoP principles could be meaningfully integrated into their classrooms.

Observing the community-sharing processes: In this stage, I observed and documented the community-sharing sessions while actively engaging in discussions with the teachers about the implementation of CPoP and CCT. This dual role of observer and facilitator allowed me to gain a deeper understanding of how teachers were interpreting and integrating these concepts into their teaching practices. Data collection during this stage involved observations of the focus group discussion, as well as field notes, capturing the interactions between participants, their collaborative exchanges, and the ways they shared and refined ideas. Additionally, I noted participant responses and any emerging insights or challenges.

This stage also included initial data analysis, as qualitative AR typically involves concurrent data collection and analysis (Efron & Ravid, 2013; Kemmis & McTaggart, 2005; Mills, 2014). Engaging in this iterative process enabled me to identify patterns and themes in the teachers' learning and their evolving understanding of CPoP and CCT. These insights were crucial in shaping the subsequent reflection phase and ensuring that the community-sharing sessions helped to tailor to the necessities of the participants or address the learning gaps.

Reflecting: The reflection stage required me to step back from the data and conduct an examination from a fresh perspective to generate insights from the observed results (Efron & Ravid, 2013; Lapan et al., 2012). We focused on monitoring the teachers' progress and identifying areas where additional clarification or support was needed. This reflective process was collaborative, with discussions emphasising how well the teachers were able to apply CPoP concepts and what further resources or guidance might be necessary.

The reflection helped us recognise where some teachers showed confidence in implementing CPoP, while others required more assistance to fully grasp the concepts. This stage was essential in adjusting the TPL program to better meet the teachers' needs before moving into classroom practice (see Appendix 3, the example of reflection from the community-sharing session).

4.2.5 Cycle 2: Classroom practices

In the second cycle, the focus shifted from theoretical understanding to practical application, where teachers implemented CPoP and CCT strategies in their classrooms.

Planning: During the planning phase, we collaboratively designed specific learning sequences to apply CPoP principles in classroom practices. The goal was to create lessons to engage students by connecting their learning to local and environmental contexts. Teachers worked on incorporating PBE into their curriculum, ensuring that students could make connections between their immediate surroundings and the broader educational goals such as achieving core competencies in literacy and numeracy, developing character education, and aligning with the national focus on student independence and collaborative skills as outlined by both the *Merdeka* curriculum and the K13 curriculum. The focus was on project-based and inquiry-based learning, which encouraged the students to engage with their local environment and address social or environmental issues in their community.

Acting: Once the learning sequences were in place, teachers implemented them in their classrooms, ensuring that students were actively engaged in place-based learning experiences that fostered CCT. The activities encouraged students to connect their learning totheir local environment, allowing them to explore real-life problems and think critically about possible solutions.

During this stage, teachers facilitated inquiry-based activities and hands-on projects that focused on local issues such as environmental sustainability, community development and local traditions. These projects were designed to encourage students to apply their learning meaningfully, promoting CCT. Finally, I observed classroom interactions, focusing on how students engaged and made connections between local contexts and their education.

Observing: In this phase, I was the observer during the teachers' classroom practice (Garces & Granada, 2016). My primary focus was observing how teachers integrated CPoP and CCT strategies in their classrooms, gathering data through classroom observations and student work samples (See Appendix 5 for the example of students' work samples). I documented how the teachers applied the planned learning sequences and activities and how students engaged with the place-based learning tasks. After each observation, I was involved in informal feedback sessions with the teachers, providing constructive feedback on their implementation of CPoP and CCT strategies. These discussions allowed teachers to reflect on how the lessons went, share the challenges they encountered, and discuss their perceptions of student engagement and learning outcomes. This feedback was essential for helping teachers refine their practices for future lessons, ensuring that the integration of CPoP and CCT remained responsive to both the student's needs and the curriculum goals.

Reflection: In this stage, we collectively reflected on both the teachers' classroom practices and the student's learning outcomes, analysing the impact of CPoP in the classroom setting. We reflected on the impact of CPoP practices on students' CCT skills. Throughout this process, teachers were actively involved in collecting and analysing data, including classroom observations, student work samples, and their reflections on how the lessons unfolded. This reflection stage provided teachers with a valuable professional learning opportunity, allowing them to take ownership of both the implementation process and the results. Ownership, in this context, refers to the teachers' active role in designing, executing, and critically evaluating the lessons based on CPoP principles (Haslam, 2010). The collaborative nature of the reflection process encouraged teachers to reflect on their practices and consider areas for further development. This stage was essential for generating insights that informed future cycles of the AR, as the teachers' reflections helped shape ongoing adjustments to their classroom practices. By being directly involved in the reflection and analysis process, teachers gained more profound insights into their own teaching strategies and how to better support students' development of CCT skills.

4.2.6 Teacher professional learning design

The TPL program design considered the practical approach of TPL as outlined by Darling-Hammond (2017), which emphasises the importance of context-specific exploration and active learning and fosters collaboration among the teachers. By integrating professional learning focused on CPoP and CCT into teachers' daily teaching activities and exploring school environments, the TPL program enabled the teachers to apply new knowledge and skills immediately. This approach encouraged them to reflect on their teaching practices and provided timely feedback on using the CPoP framework, helping nurture students' CCT (Desimone & Garet, 2015; Kraft et al., 2018).

This iterative process of learning and reflection involved cycles of planning, implementing, observing, and adjusting classroom strategies. For instance, teachers would experiment with CPoP by incorporating local environmental issues into lessons and then reflect on how these activities supported students' CCT. They discussed these reflections with me as the observer, receiving feedback that helped them evaluate their practices. Based on our discussions, they made adjustments and tried new approaches. This ongoing process of trying new methods, reflecting on their effectiveness, and refining them was crucial in helping teachers internalise CCT and CPoP principles. It allowed them to adapt their teaching practices to their specific classroom contexts, progressively enhancing their ability to nurture students' CCT and improve student outcomes (Kennedy et al., 2016; van den Bergh et al., 2015).

Furthermore, the TPL program's use of collaborative learning communities provided a platform for enabling teachers to exchange experiences, challenges and accomplishments with their peers, cultivating a supportive atmosphere for professional growth (Schleifer et al., 2017). Collaborative

learning allowed teachers to exchange practical strategies, discuss real-life classroom issues, and reflect on each other's experiences, which helped them develop new insights and refine their teaching practices (Hassler et al., 2015). This process of learning from one another's diverse perspectives contributed to building a deeper understanding of CPoP and CCT. It helped teachers grow professionally by enhancing their problem-solving skills and adaptability (Vangrieken et al., 2017). The continuous mentoring offered throughout the program provided additional support, helping teachers refine their practices and overcome any obstacles they encountered (Fletcher & Mullen, 2012). This mentoring, which included regular feedback and guided reflection, enabled teachers to continuously adapt their teaching strategies based on their classroom contexts and challenges. Mentoring was the primary method used to support teachers, the collaborative nature of the program also allowed for informal mentoring relationships to form, where teachers offered advice and support to their other teachers.

My study applied three phases of the TPL program, each with a different but correlated focus, and involved an intervention in the second phase to implement change (Gun, 2017; Hall & Hord, 2006). Over the course of February 2022 to July 2023, the program involved both the teachers and me as the researcher, working together to gradually adopt and integrate CPoP and CCT strategies into their classrooms (Figure 4.3 shows the project design timeline).

Phase 1 was the orientation program or pre-intervention program phase that explored the teachers' prior knowledge and belief around CCT and CPoP and their expectations as well as their desired outcomes from the research. The preliminary observation was also conducted in the orientation program to introduce myself to the school community and understand the school environment and local context. Phase 1 was considered as the planning stage of Cycle 1.

Phase 2 was an intervention program where the AR was conducted, as explained in the previous section, that involved three stages of intervention (Intervention I, II, III). The intervention focused on exploring the teachers' understanding of the CPoP and CCT model, designing classroom activities and implementing the design. It had a spiral process as it went through planning, taking action, observing, and reflecting on the action (Abey et al., 2015; Kemmis et al., 2014). Cycle 1 was carried out in Intervention I and II, while Cycle 2 was carried out in Intervention III. Further, the student's responses and artefacts towards the class activities were observed at this stage as part of the teacher's reflections, providing valuable insights into implementing the CPoP and CCT model.

Phase 3 was the post-intervention, which reflected the entire program and discussed its future planning. We discussed future planning for the ongoing professional growth of the CoP. Ongoing professional growth is essential for sustainability, as it ensures that teachers continuously enhance their skills and knowledge through the TPL process, ultimately improving their professional

capabilities (OECD, 2019) and having an impact (Darling-Hammond et al., 2017). The ongoing CoP created professional learning communities of teachers involved in the research that were able to support the improvement in practice within and across the school (Darling-Hammond et al., 2017). To facilitate ongoing collaboration and communication among the teachers, it was essential to establish a platform that supported easy access and interaction beyond the formal sessions of the CoP. During the intervention, we created a WhatsApp group to maintain consistent communication and collaboration, as the teachers and I were already active users of the platform. We found sharing resources, discussing challenges, and maintaining engagement between meetings was convenient and practical. The platform was easy to use, accessible, and affordable, breaking down location barriers and allowing for continuous professional development within the larger society (Ajani, 2021). We continue to communicate through this social media platform, maintaining the collaborative spirit we established during the research (Cansoy, 2017; Kihwele & Mgata, 2022; Moodley, 2019; Tenório et al., 2021).

The detailed design stages of this project are shown in Table 4.1, following the project timeline in Figure 4.3.

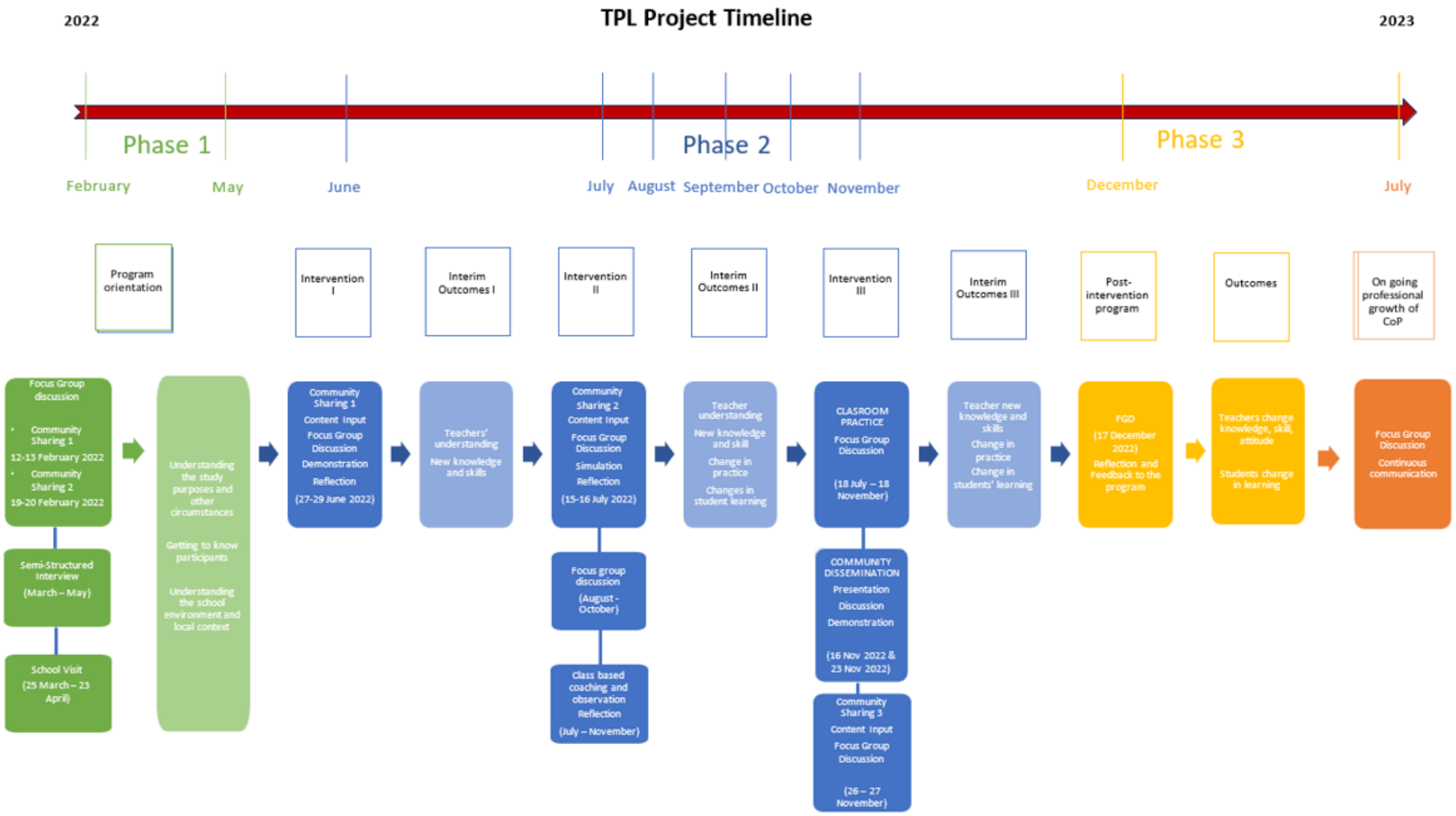

Figure 4.3 Project design timeline

Table 4.1 Program schedule of teacher professional learning within a community of practice: Implementing critical pedagogy of place to foster critical and creative thinking in primary school

Study 1: Program Orientation (February–April) Aims: • Introducing the teachers to the research • Exploring the teachers' expectations of the program and desired outcomes • Understanding the school environment and local context		
Date	Content focus	Activities
Community sharing session 1 12 – 13 February 2022 09.00 am – 3.00 pm (Indonesia Western Time)	Introductions and get-to-know. Program Orientation Review of Kurikulum 2013 of primary school Grade 1, Emergency curriculum, and Merdeka Curriculum	Focus group and semi-structured interview to share experiences and build partnership and collaborative work commitment
Community sharing session 2 19–20 February 2022 09.00 am–3.00 pm (Indonesia Western Time)	Orientation on CCT and CPoP Review of environmental education and CCT Merdeka Curriculum and CCT CCT and CPoP background information	Focus group and semi-structured interview to share experiences and build partnership and collaborative work commitment
25 March–23 April (Tentative based on school availability)	Meeting with the school principal and teachers learning about or becoming acquainted with the school environment	School visit
May	Preparation for Implementation	Administrative permission
Study 2: Intervention Program (June – November) Aims: • Exploring teachers' understanding of CCT and CPoP. • Designing classroom activities • Exploring the enables and obstacles of CPoP and students' responses to the class activities through teachers' reflection and observation.		
Date	Content focus	Activities
Intervention I Community sharing session 1 (27 June–29 June 2022) 09.00 am–3.00 pm (Indonesia Western Time)	1. Critical and creative thinking (CCT) 2. Assessing CCT 3. Critical pedagogy of Place (CPoP)	• Content input • Focus group discussion • Demonstration • Reflection (Interactive feedback)
Intervention II Community sharing session 2 (15-16 July 2022) 09.00 am – 3.00 pm (Indonesia Western Time)	1. Deepening CPoP 2. Integrating CPOP into Merdeka curriculum 3. Designing class activities	• Content Input • Focus group discussion. • Simulation • Reflection (Interactive feedback)
Intervention III Classroom Practices (18 July – 18 November) Follow-up meeting	1. Implementing sequence of learning 2. Sharing and discussion	• Focus group discussion
Community Dissemination 16 & 23 November 2022 09.00 am – 4.00 pm (Indonesia Western Time)	Sharing about CCT and CPoP with other teachers (District and Regional teachers' community)	• Presentation • Discussion • Demonstration
Community sharing session 3 26 – 27 November 2022 09.00 am – 3.00 pm (Indonesia Western Time)	1. Review on CCT and CPoP 2. Discussions on obstacles and enablers	• Content Input • Focus group discussion
Post- intervention program (December 2022 – July 2023) Aims: Reflecting the program and future planning		
14 December 2022	Reflection to assess the impact	Focus Group Discussion
July 2023	Ongoing professional growth of CoP	Focus Group Discussion

Guskey's (2002, 2016) level of professional learning model served as a guide for designing the TPL framework in this study. The model informed the structure and key activities of the TPL, which included community sharing, classroom-based mentoring, and reflective practices. These levels – Participants' Reactions, Participants' Learning, Organisational Support and Change, Participants' Use of New Knowledge and Skills, and Student LearningOutcomes – helped shape the TPL design

to ensure it addressed essential components of professional learning and its impact on teaching practices.

Table 4.2 Guskey's (2002, 2016) level of professional learning evaluation

Level	Focus	Method
Participants' Reactions	Reactions and satisfaction with the content, delivery, and overall experience of the TPL	Feedback conducted immediately after each stage of intervention through focus group discussion
Participants' Learning	Knowledge and skills acquired	Moon's stages of learning (1999) applied to assess the teachers' learning of CPoP and CCT during the intervention
Organisation support and change	Institutional support and policy changes	Discussion with teachers to identify support to implement CPoP
Participants' Use of New Knowledge and Skills	Application of CPoP and CCT knowledge and skills in practice	Classroom observations using observation protocol, and teacher reflective activities
Student Learning Outcomes	Impact on student achievement	Students' learning outcomes reflected from the teacher's observation

The design of the TPL program, informed by Guskey's model (2002, 2016), addressed key aspects of professional learning. Participants' reactions to the program were incorporated into the design by providing opportunities for immediate feedback through focus group discussions, allowing for reflection on the applicability of the content delivered. The participants' learning component guided the inclusion of activities that assess knowledge acquisition, drawing on Moon's (1999) stages of learning to understand how teachers comprehend and apply CPoP and CCT during the intervention. Additionally, organisational support and change influenced the design by highlighting the importance of securing institutional backing and ensuring teachers had access to the necessary resources and support, such as school leader's support to implement CPoP. The practical application of new knowledge and skills was facilitated by incorporating classroom observations and teacher reflections into the TPL, supporting the integration of CPoP and CCT strategies into real-life teaching practices. Finally, student learning outcomes shaped the design to connect teacher growth with student success, ensuring that the TPL activities ultimately aimed to improve student outcomes.

4.2.7 The researcher's role

In this study, the relationship between the teachers as practitioners and me, as a researcher,was shaped by the principles of community of practice and action research (Boetto et al., 2022; Burns, 2011). I previously explained that I formed a cooperative and collaborative relationship with the

teachers, and their contributions were central to the research (Badley, 2003). I also explained that the teacher participants were active learners who needed to articulate the other teachers' concerns, devise strategic action for change, monitor the issuesand impacts of modification, and reflect on the principles and consequences of the achieved changes (Ferguson & Kennington, 2003; Gaffney, 2008).

My role as a researcher involved both outsider and insider perspectives. As an outsider, I was responsible for determining how the research would unfold and acted as an observer throughout the process. Although involved in the CoP, I needed to reflect on my role and maintain researcher reflexivity regularly. At times, I stepped back from my close involvement with the participants to take a more objective stance. This periodic distancing allowed me to analyse and reflect on the data more critically without being overly influenced by my engagement in the research process (Breen, 2007).

However, as an insider, I shared a common identity, language, and cultural background withthe participants, which helped me understand the challenges they faced. Although I did not work directly in the schools, my familiarity with the educational context—including the schools' operations and pedagogical practices—enabled me to relate to their experiences. This connection allowed me to build trust with the teachers and gather deeper insights into their perspectives (Paechter, 2013). This insider role facilitated greater acceptance and enhanced the quality of the data collected (Dwyer & Buckle, 2009; Hayfield & Huxley, 2015; Kanuha, 2000).

During the study, I had an advantage as an insider, which made the initial process much smoother. Sharing a common cultural and professional background with the participants allowed me to establish trust and build rapport quickly. This shared context helped bridge communication and facilitated a deeper understanding of their experiences (Asselin, 2003). I demonstrated my familiarity with their context by sharing my previous experience as an educator. This helped reassure the participants that I understood the challenges they faced and contributed to building trust. This connection also fostered openness in our interactions,allowing for more honest sharing and discussions during interviews and other research activities (Taylor, 2011). As a result, participants freely shared updates about their school circumstances, the problems they encountered, and insights into their day-to-day teaching. This familiarity and frequent communication, including through WhatsApp, allowed me to stayattuned to their learning experiences and the challenges they faced in implementing CPoP and stimulating CCT. By understanding these challenges in depth, I was better equipped to tailor my support to their needs, providing relevant guidance.

My position as an outsider was important during the study in fostering an objective viewpoint, allowing me to observe and analyse the situation without preconceived biases or emotional

involvement (Bukamal, 2022; Dwyer & Buckle, 2009). However, I acknowledge that complete objectivity or being entirely bias-free is challenging, especially given the toggling between insider and outsider roles. While I aimed to minimise preconceived biases, I recognised that my involvement in the research could still influence my perceptions. To mitigate this, I employed researcher reflexivity, regularly reflecting on my position and potential biases throughout the study (Breen, 2007). I engaged in self-reflection, particularly after interactionswith participants, to ensure that my analysis remained balanced. Being external to the teaching context allowed me to offer new insights and question established norms and practices, which created opportunities for teachers to engage in deeper reflection and discussion (Justine, 2007; Rabe, 2003). This practice helped me maintain an objective stance while recognising the complexities of my involvement.

When conducting this study, I needed to clarify the difference between the outsider and examiner roles to the teachers. This was necessary after my first day of classroom observation of their CPoP implementation. The teachers at that time looked so tense during the classroom observation as if I was listing mistakes or errors during the classroom practices. This tension became evident after an observation when the teacher said: "*Ibu*, howwas my performance? Really sorry, I was so nervous, and I'm sure there were many mistakes I made". This situation continued along the reflection activity after the observation when I planned to have a dialogue with the teachers, but instead, they gave short answers orresponses such as "yes", "I don't know", "maybe", and "what do you think is the best?". Beingan insider or outsider can significantly influence the power dynamics in the research relationship. Participants might perceive insiders as equals, potentially equalising the power balance. In contrast, outsiders might be seen as more authoritative or less trustworthy, whichcan create different power hierarchies (Råheim et al., 2016).

4.3 Research setting

The research was conducted in 12 public primary schools in the BMA, Indonesia. Each school had a different school environment. The research site in this study was chosen for several reasons. First, having been a lecturer in a teacher education program that partnered with primary schools in Bandung, I had access to the research site, which was expected to lead to better collaborative work. Second, in Indonesia, the formal education program beginswith primary school, and as suggested by Roche (2014), junior primary becomes the most important stage for developing future academic life success. Third, as the research applies CPoP and concerns about ecological and social life practices, the BMA is suitable for conducting research because of its ideal context for my study: I speak the language, nationaland local; I have been living there since I was a child; and I was able to build relationships with the teachers.

Bandung is Indonesia's third-largest metropolitan centre, with over 11 million inhabitants. The city lies on a river basin surrounded by volcanic mountains. The northern region of Bandung is hillier

than other parts and serves as a water reservoir for the city. However, the area has seen substantial residential development in modern days. The southern and eastern regions are industrial areas with many factories and transition areas between rural and urban. The southern region experiences regular flooding every wet season, whereas the western region is mostly a residential area. Thus, the participants' schools covered four different regions: northern, southern, eastern and western, including one school located in a coastal area, as shown in Figure 4.4 as a map of the BMA.

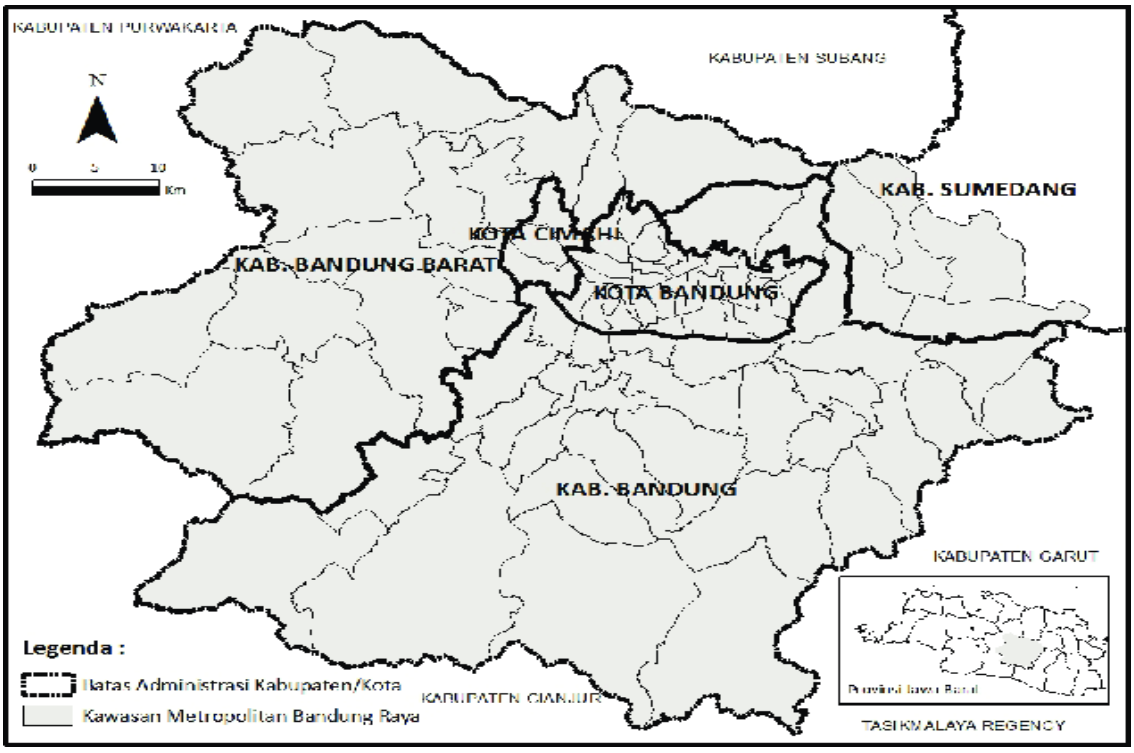

Figure 4.4 Bandung Metropolitan Area (Maryati et al., 2016)

In addition to the factors outlined above, the restrictions caused by the COVID-19 pandemic during the time of my data collection had brought changes to people's daily interactions, family and social lives, as well as the economy of the Bandung population. As with many communities, the pandemic had added another layer to the climate, environment and infrastructure problems confronting the people of the region.

4.4 Teachers and their schools

The participants in this study were 12 teachers of Grade 1 students in public primary schoolsin Bandung who voluntarily participated in my research. Participants were recruited following university approval (4094). Each of these teachers engaged and interacted with different students every year, which resulted in them having a profound and influential impact on the lives of many children. I employed purposive sampling, selecting participants based on their specific characteristics and experiences relevant to the study's focus on CPoP and CCT (Palinkas et al.,

2015). This method ensured that the selected teachers had the necessary background and potential to contribute valuable insights to the research.

In the context of my research, the specific characteristics and experiences of the participants were as follows:

1. The participants were grading 1 teacher at primary schools, from novice to veteran teachers.
2. Participants were representative teachers from each zone in BMA who would willingly give time to participate in the research.
3. The participants were not, or were never, involved in the *Guru Penggerak* program, which the program emphasises skills in mentoring, coaching, and applying innovative pedagogical strategies that foster student-centred learning (Satriawan et al., 2021; Sholehet al., 2023).
4. The participants were committed to professional growth and enhancing their teaching practices through their participation in the study.

Their involvement in this research offered them an alternative avenue for professional learning, focusing on CPoP to foster CCT. This allowed the study to explore how teachers who are outside the structured government program approach innovation in their teaching practices and contribute to educational development in their schools. Most importantly, the teachers wanted to make an improvement in their repertoire of practice and were able to work collaboratively with other teachers since CPoP was used and work with me as the researcher in the research process (Davis, 2007). Their potential contributions lay in their ability to share first-hand insights about the challenges and opportunities of applying CPoP principles in their daily teaching and their observations of how students responded to learning. The principal objective of purposive sampling is to concentrate on specific characteristics of a population that are pertinent, so facilitating the researcher in addressingthe research questions effectively (Etikan et al., 2016).

To gain school support, I initially reached out to the school principals through email, followed by in-person meetings. These meetings were essential to establish rapport, explain the study's objectives, and discuss how the research could benefit their schools and the professional learning of their teachers. Once school support was secured, I coordinated with the principals to identify and select teachers who met the study's criteria. Teachers were selected according to their willingness to participate, teaching experience, and openness to incorporating CPoP and CCT in their teaching practices. All participants provided informed consent before the beginning of the study and sent via email. Each teacher received an information sheet detailing the study's purpose, procedures, potential risks and benefits. This was followed by a consent form, which they signed to indicate their voluntary participation. I ensured that participants understood their entitlement to leave from the study at any moment without incurring adverse repercussions right to withdraw from

the study at any point without any negative consequences. Regular communication was maintained throughout the study to address any concerns and provide ongoing support. Table 4.3 shows the schools,participating teachers and their respective curricula.

Table 4.3 List of schools, teachers and curricula

No	School Name	Teacher	Curricula
	Schools of Southern Bandung (SSB)		
1	SSB 1	T-SSB1/Pina	2013 /Emergency Curriculum
2	SSB 1	T-SSB2/Rani	*Merdeka* Curriculum
	Schools of Northern Bandung (SNB)		
3	SNB 1	T-SNB1/Yuna	2013/Emergency Curriculum
4	SNB 2	T-SNB2/Lela	2013/Emergency Curriculum
5	SNB 3	T-SNB3/Euis	2013/Emergency Curriculum
6	SNB 4	T-SNB4/Anna	2013/Emergency Curriculum
7	SNB 5	T-SNB5/Fira	2013/Emergency Curriculum
	Schools of Western Bandung (SWB)		
8	SWB 1	T-SWB1/Susi	2013 Curriculum
9	SWB 2	T-SWB2/Dewi	2013 Curriculum
10	SWB 3 (coastal area)	T-SWB3/Ika	2013 Curriculum
	Schools of Eastern Bandung (SEB)		
11	SEB 1	T-SEB1/Nina	*Merdeka* Curriculum
12	SEB 2	T-SEB2/Mia	*Merdeka* Curriculum

Most of the schools participating in the study allocate 2.5 hours of school time for Grade 1 students, starting at 7 am, with classes scheduled from Monday to Saturday. However, some schools have extended their school hours from 7 am to 11 am in order to accommodate the equivalent of a six-day week, as these schools are closed on Saturdays. An overview of the school profile based on the location and the participant brief follows.

4.4.1 Schools in the southern part of Bandung Metropolitan Area

The southern part of Bandung faces significant environmental challenges, such as frequent flooding caused by the *Citarum* River, deforestation, and industrial pollution. These factors affect the community and create obstacles for schools attempting to implement CPoP. However, they also offer opportunities for students to engage with real-life environmental issues, fostering CCT. Two primary schools, SSB 1 and SSB 2, participated in this research. SSB 1, located near the *Citarum* River, experiences frequent flooding during the rainy season. The school is part of the Adiwiyata Green School program, which promotes environmental conservation amongthe student community (Baihaki et al., 2022; Kusuma & Kusuma, 2020) and serves as a foundation for integrating CPoP. However, the environmental challenges, including flooding and industrial pollution, posed difficulties for consistent outdoor learning and hands-on place-based activities. While these issues presented opportunities for students to participate in problem-solving and environmental awareness (key aspects of CCT), the transition from online to offline classes added further complexity. Additionally, SSB 1 was founded in 1980 with a school complex of 1500 square

metres and a two-storey building of 1200 square metres. The student body was approximately 900 students, aged 6–12 years, spread across 19 learning groups/classes from Grade 1 to Grade 6. As there were only 10 classrooms, the school was divided into morning and afternoon sessions.

SSB 2, located near factories and a traditional market on a busy road, faced different challenges. Although outdoor learning within the schoolyard was possible, the constant noiseand traffic made it difficult to extend these activities beyond the school premises. The distractions from the surrounding environment often caused students to lose focus, which presented challenges for teachers. However, this context also provided opportunities to stimulate CCT by engaging students in discussions and activities about local environmental and community issues, which are central to CPoP and CCT. SSB 2 was built in1976 with 1800 square metres of classroom space. The student body was 407, aged 6–12 years and spread across 12 group learning/classes. The school was also divided into morning and afternoon classes, with only six classrooms. At 7 am each day, all the studentsin that school usually had morning habituation activities for 15 to 30 minutes, such as storytelling, singing traditional songs, and participating in the Monday morning flag ceremony.

In both schools, environmental constraints—whether flooding or noise—presented barriers to implementing CPoP activities and fostering CCT. SSB 1 benefited from the Adiwiyata program, which supported environmental education, but frequent flooding and the shift to offline classes created hurdles. At SSB 2, noise and distractions made it harder for teachers to focus on place-based learning and critical thinking. However, the context also offered opportunities for engaging students with local environmental and community issues.

4.4.2 Schools in the northern part of Bandung Metropolitan Area

The northern part of Bandung is characterised by its mountainous terrain, fresh air, and natural beauty. While teachers can access the schools, challenges such as poor road conditions and limited public transportation, particularly during the rainy season, make it difficult to extend learning beyond the school area. Though teachers could utilise the surrounding environment for place-based learning, outdoor learning activities were largely limited to the school grounds, which restricted the full potential of CPoP. Unfortunately, some parts of this region have undergone changes in land use, where forestshave been converted into mixed gardens and residential areas Five schools participated in this region. SNB 1, the most remote school, faced significant infrastructure issues, including broken classrooms and limited space. The school’s location ina more isolated area, coupled with poor road conditions, presented challenges for outdoor learning beyond the school grounds. Though the natural environment could have provided opportunities for CPoP activities, such as engaging students in environmental awareness and conservation, teachers largely kept students within the school grounds, limiting the opportunity for place-based learning connected to the broader environment. The school was built in 1962 with 520 square

metres of school space. It has three classrooms serving 237 students divided into six learning groups from Grade 1 to Grade 6, one principal's room, and one teachers' room.

SNB 2, SNB 3, and SNB 4 faced fewer infrastructure challenges compared to SNB 1, but teachers similarly limited learning activities to the school premises. Though the schools weresituated in relatively natural surroundings, the distance to outdoor locations suitable for learning meant that teachers did not frequently engage students in hands-on activities or community-based projects beyond the school area, both key aspects of CPoP. SNB 2 was established in 1956 and had a 991 square metre floor area consisting of six classrooms, one principal's room, one teachers' room, a library and a schoolyard. Itserves 184 students from Grade 1 to Grade 6.

SNB 3 and SNB 4 are neighbours and face each other. SNB 3 was establishedin 1991 with 300 square metres of school space, while SNB 4 was established in 1984 and has 924 square metres of school space. They have two stairs to the school building consisting of six classrooms, a library, a principal's room, and a teachers' room. There were 391 students divided into 11 classes of Grade 1 to Grade 6 at SNB 4, while SNB 3 serves 397 students.

SNB 5, located in a small alley shared with two other schools, faced significant challenges due to limited space and a tight schedule. The school had to share its schoolyard and facilities with two other schools, which restricted the time and space available for outdoor learning or any extended hands-on activities. The lack of available space and the tight scheduling made it difficult to implement CPoP and foster CCT through place-based learning or community engagement. SNB 5 was built in 1910 with 376 squaremetres of school space that was shared with two other schools. The school served 225 students with seven classes from Grade 1 to Grade 6 divided into morning and afternoonshifts.

The northern schools were situated in an environment that offered opportunities for environmental learning. However, outdoor learning was largely limited to the school grounds, as teachers rarely took students beyond the school area. SNB 5, in particular, struggled with limited space, a tight schedule, and frequent noise distractions from other schools sharing the yard, which made it difficult to maintain students' focus and engage themin outdoor or community-based learning activities.

4.4.3 Schools in the western part of Bandung

The western part of Bandung is a mix of housing areas, farmland, and places of interest. It also serves as the gateway into Bandung from the western part of West Java and Jakarta, the capital city of Indonesia. During weekends, this area experiences a high volume of vehicles as visitors come to enjoy the local cuisine, scenic spots, and attractions. The downside of this influx of visitors is the heavy traffic congestion, which can cause disruptionsto school activities, including late

arrivals, noise pollution, and transportation delays for school trips.

Three schools from this region participated in the study. SWB 1, located within an army housing complex, benefited from relatively good infrastructure and a well-maintained environment. The school had a spacious campus and participated in the Adiwiyata program promoting environmental education. This provided chances for students to engage in activities related to environmental conservation and awareness, key components of CCT.

The school's infrastructure and spacious grounds made it possible for teachers to organise place-based learning activities. The school was built in 1964, had 543 students, and was divided into 18 classes or learning groups from Grade 1 to Grade 6. They held learning activities for six days a week and divided them into morning and afternoon classes, as they only had seven classrooms to serve the students.

SWB 2, a school located in a residential area, catered to a smaller number of students, including those with special needs. The school was started to be involved in community-based projects and outdoor learning activities, which are essential for fostering CCT. Despite its smaller size, SWB 2 made use of its resources to engage students in local community activities and place-based learning. Teachers incorporated outdoor learning within the school area, and the students participated in projects that connected them to their local environment and community. SWB 2 was also located in a housing complex and one ofthe inclusive schools in BMA. The school served few students because they had to manage more students with special needs than the other schools. They served 76 students fromGrade 1 to Grade 6.

SWB 3 located near a coastal area surrounded by natural resources like rice fields and mangroves, had access to a rich environment for place-based learning. Although the school was one of the oldest in the region, its infrastructure could still be used for regular classroom activities. The school's proximity to natural surroundings allowed teachers to engage students in outdoor learning within the school area, and they had the opportunity to further extend activities beyond the school, such as visiting the nearby mangrove forest. While organising such activities required planning and coordination, the potential for environmental awareness and hands-on learning was readily available within the local context. The school was built in 1921 and had 2294 square metres of school space. They had 174 students from Grade 1 to Grade 6.

The schools in the western part of the BMA present unique opportunities for the implementation of CPoP and the development of CCT. With access to diverse environments—ranging from army housing complexes to coastal areas—each school has thepotential to leverage its local context to create meaningful, place-based learning experiences.

4.4.4 Schools in the eastern part of Bandung

The eastern part of BMA is a connecting zone from the city to the suburbs and other towns inthe eastern part of Java. The eastern part of the BMA has experienced rapid development with the construction of suburban housing complexes and factories. However, the region relies on a single major road, leading to frequent traffic congestion, especially as large trucks and buses pass through the area. These logistical challenges can affect school operations, but they also provide opportunities for students to explore real-life issues like transportation and pollution, which help promote CCT.

Two primary schools, SEB 1 and SEB 2, participated in thisresearch. Both schools are located in residential areas near busy roads and prioritise maintaining clean and green environments. Teachers have made efforts to introduce environmental and social awareness into their teaching practices, although opportunities for outdoor learning beyond the school grounds are limited due to traffic and safety concerns. Both schools are in the process of transitioning to the curriculum, which presents additional challenges as they work to integrate new educational approaches. SEB1 was built in 1981 and served 339 students. SEB 2 served 449 students and had 1288 square metres of school space.

Despite challenges like traffic congestion and limited outdoor space, the schools in this studyfrom the four parts of BMA offer valuable opportunities for integrating place-based learning and encouraging CCT. With resources such as green spaces, natural surroundings,and community-based projects, teachers can potentially apply CPoP in their teaching.

4.5 Data collection method

The primary data were collected through semi-structured interviews, observation of the teachers' classroom activities and focus group discussions to answer research questions, as outlined in Table 4.4. The secondary data were gathered from government websites such as curricula, school sites and the student's work during the class activities.

Table 4.4 Methods of research

No	Research Questions	Research Objectives	Research Method
1	What are teachers' intentions in implementing CPoP?	Understanding the teachers' intentions covering motivations and expected outcomes in implementing CPoP to foster students' CCT	Interview, focus group discussion
2	How do teachers understand CCT?	Understanding the teachers' understanding of CCT	Interview, focus group discussion
3	How do teachers understand CPoP as part of classroom teaching practices?	Understanding teachers' understanding CPoP and its implementation in the	Focus group discussion, observation, & documentation

		classroom practices	
4	What are the enablers and inhibitors of implementing CPoP in fostering the students' CCT?	Reflecting the implementation of CPoP	Focus group discussion, observation, & documentation
5	5. What are the teachers' observations about students' responses to CPoP implementation?	Exploring the teacher's reflection towards the students' responses during the class activities	Focus group discussion, observation, & documentation

4.5.1 Semi-structured interview

A dialogical method with the participant teachers was considered an important interaction toget a comprehensive understanding of the teachers' feelings and views and to generate trust, planning and a shared vision for the research (Huffman, 2017). Interviews were held inthe form of conversations with the primary purpose of arriving at answers to the research questions, as shown in Table 4.4 (Burgess, 1988) prior to and after the CPoP implementation. The interviews were semi-structured with the purpose of giving participants the opportunity to raise issues that were important to them (Radermacher & Sonn, 2007), and I was able to explore specific points when necessary. The interview protocol was designed based on a review of relevant literature (Gruenewald, 2003a; Haslam, 2010; Patton, 2002; Smith & Sobel, 2010; Vincent-Lancrin, 2021) and subsequently reviewed and refined in consultation with my supervisors and the ethics committee (see Appendix 1).

The semi-structured interviews first explored the teachers' understanding of CCT and CPoP and their intention in implementing CPoP. The semi-structured interview was conducted through dialogue with participants (Efron & Ravid, 2013). Second, the teachers' understanding of CPoP in classroom teaching practices was determined. The purpose of thefollow-up interview was to reflect and discuss the teaching and learning process for improvement in the following action (cycle), to reveal the obstacles the teachers found, toverify what I found during the classroom observation (Efron & Ravid, 2013).

The interviews were conducted either online through Zoom meetings or phone calls or in person at their school. All interviews were recorded using Zoom meeting recording and my personal handphone, saved on a computer, and backed onto a cloud drive. To ensure data security, all files were password protected and encrypted both on the computer and in the cloud. The interviews varied from 30 minutes to 1 hour. The interview protocol can be foundin Appendix 1. I then transcribed all interviews from Bahasa Indonesia and translated them into English.

I was able to gain insight from the interviews into how teachers represent and reconstruct classroom teaching practices. In other words, I was able to clarify my doubts about the teachers' approaches to implementing CPoP and promoting CCT, which helped me better understand their

experiences and perspectives. After each classroom observation, the interviews also facilitated a more in-depth exploration of the subject matter, as I could ask follow-up questions and probe further to gain additional insights. Semi-structured interviewsenabled me to create a rapport with the participants, allowing for more open and honest discussion.

4.5.2 Focus group discussion

Focus group discussion was conducted to gain in-depth information and explore participants' perspectives in a short period of time (Basnet, 2018; Gundumogula, 2020). Data from the focus group discussion were collected at the pre-program meeting, during the implementation, and after the implementation (post-program meeting). In the pre-program meeting conducted in February 2022, all teachers shared experiences and reflected on whatactivities they had created in the classroom for the Grade 1 students. We also discussed the2013 and emergency curriculum and explored the teachers' background knowledge of CCT and CPoP.

During the implementation of CPoP, focus group discussions were conducted in every community sharing session, which aimed to build a foundation for the teachers' understanding in relation to the CCT and CPoP model. We discussed the concept and the importance of CCT and CPoP, how to use *place* concerning CPoP in teaching and learning,and how to integrate CPoP in teaching and learning that promotes CCT for a student. The following focus group discussion concentrated on the implementation of the CPoP activitiesof each teacher in their classroom. The focus group discussion was conducted in the community sharing session and also every three weeks, depending on the teachers' availability to share their experiences of implementing CPoP in the classroom, the obstacles the teachers found during the implementation and strategies to solve the problem. We werealso sharing new ideas of CPoP activities. Furthermore, we exchanged ideas on CPoP activities that could be implemented or adapted in the classroom. the data from the focus group discussions were audio recorded, transcribed and translated into English, and I personally did the transcription and translated the data.

Interview and focus group transcripts, once transcribed, were given to the participants for their final consent and approval or member-checking (Birt et al., 2016; Candela, 2019). The purpose was to be accurate in the representation of their statements and perspectives, providing them with an opportunity to review and validate the content (Mero-Jaffe, 2011).

Further, Rowlands (2021) argues that this process serves to confirm that their views are captured correctly and uphold ethical research practices by allowing participants to make any necessary amendments or clarifications before finalising the data for analysis.

4.5.3 Observation

The classroom observation was conducted to generate data on teachers' implementation ofCPoP and student-teacher interaction, and the impact on the learning (White, 2012). I consulted with participating teachers concerning some of the methods of research and options for reporting classroom activity. The teachers agreed to have voice recordings and for me to use reflective rubrics of observation with them after practice. I developed two rubrics for them to self-assess their understanding and implementation of CPoP and CCT.

The first rubric focused on the learning sequences and listed elements of implementing CPoP that foster CCT adapted from Gruenewald (2003a), Patterson (2001) and Dunn et al.(2018) (See Appendix 2). The rubric was created to assess how teachers integrate CPoP principles into their classroom activities. It reflects how teachers implement activities that embody the core tenets of CPoP, such as fostering community engagement, promoting environmental awareness, and encouraging real-life problem-solving. The rubric reflects how the activities structured by teachers promote CCT and ensure that students engage with local contexts and community-based issues. The second rubric assessed students' CCT capacities that were adapted from Kemendikbud (2022), Combs et.al. (2009), and ACARA (2012) (see Chapter 2) and combined with the literature related to CPoP (see Chapter 3). The rubric shows whether students achieve the criteria. I gave the teachers the flexibility to choose and use the rubric most applicable to them. I discussed with the teacher what element they would focus on based on the learning objectives and their students' needs(Black & Wiliam, 2018). The data collected through the observation using these rubrics alsofacilitated meaningful discussions during our community meetings, where teachers could exchange their experiences, such as how they encouraged students to relate their learning tolocal contexts or engage in environmental problem-solving activities. The teachers collaboratively develop best practices like adapting project-based learning to incorporate community engagement and refining group activities to foster collaboration and creativity to promote CCT in their classrooms (Stoll et al., 2006; Vangrieken et al., 2017).

As there were 12 teachers to be observed, I carried out the intense observation for each teacher for five to six days or a week followed by feedback and reflection dialogue after each classroom observation (Darling-Hammond et al., 2020; Hattie & Timperley, 2007). The feedback and reflection dialogues held after each observation were essential for providing teachers with immediate, constructive feedback and discussing potential improvements in their instructional strategies (Wiliam, 2011). The observation was conducted for around 2 hours as most of the schools started the classroom activities at 7 am or 12.30 pm and ended at 9 am or 2.30 pm. This classroom observation took 15 weeks to complete. I wrotefield notes during the observation period to capture detailed qualitative data about the interactions and instructional practices observed in the classrooms (Emerson et al., 2011).

4.5.4 Documentation

Documentation was collected from the 2013 Indonesian curriculum (K13), and the *Merdeka* curriculum, teachers' planning, school pictures and students' work samples. The collection of documentation provided an analysis of the educational context, including instructional strategies and learning outcomes. The curriculum documentation contained guidelines and standards that informed the educational objectives and pedagogical approaches observed inthe classrooms. During the study, the teachers faced three choices of curriculum because of the COVID-19 pandemic measures (discussed in Chapter 2). Thus, I needed to understand these curricula. Teachers' unit and lesson planning documentation was invaluable in understanding how the teachers interpreted and implemented CPoP in their classrooms.

Additionally, I used the school pictures I captured showing the physical learning environment, showcasing classroom set-ups and learning resources, which were critical to my understanding of the context in which the teaching and learning occurred. Student work samples, such as project work and creative outputs, provided insight into how students began thinking critically and creatively as they engaged with the curriculum. Field notes were utilised to capture real-time observations, reflections, and insights during classroomactivities and interactions (Phillippi & Lauderdale, 2017).

4.6 Data analysis.

Data analysis in my study primarily employed thematic analysis, a widely recognised technique in qualitative research that facilitates identifying, analysing, and reporting patterns within data (Creswell, 2013; Maguire & Delahunt, 2017; Nowell et al., 2017). Thematic analysis is particularly well-suited for conducting descriptive research and producing work focused on policy and practice. It is utilised to discern patterns within and across data pertaining to participants' lived experiences, seeking to understand their thoughts, feelings and actions (Alhojailan, 2012). Thematic analysis is well-suited for exploring the rich, detaileddata collected from interviews, focus group discussions, observations, and document analysis (Creswell, 2013). Generally, the process of analysing the data was guided by Creswell's (2009) seven steps of thematic analysis for identifying, analysing and reporting patterns (themes) within qualitative data, as presented in Figure 4.20 and detailed in the sections below.

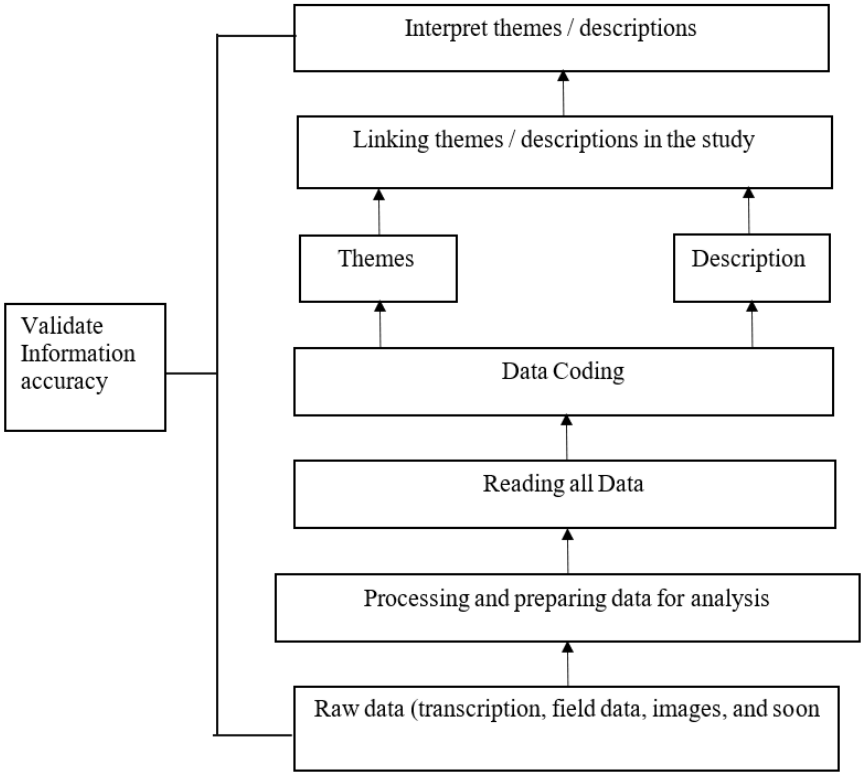

Figure 4.5 Data analysis in qualitative research (Creswell 2009, p. 172)

In addition to thematic analysis, triangulation was employed to enhance the trustworthiness and validity of the findings. By cross-referencing data from multiple sources such as interviews, focus group discussions, classroom observations, and document analysis, the themes identified were consistent and grounded in diverse perspectives. This approach helped strengthen the reliability of the study and provided a more comprehensive understanding of the research problem.

4.6.1 Organising and preparing the data for analysis

The first step involves transcribing interviews, optically scanning material, typing up field notes, or sorting and arranging the data into different types depending on the sources of information (Creswell, 2009). My first step in the process of thematic analysis involved transcribing the interviews and focus group discussions. Initially, I manually transcribed two interviews and one focus group discussion, a process that took longer than anticipated. To expedite the process, I used Transkriptor but found that it generated many errors, especiallyin handling Indonesian and Sundanese languages. As a result, I decided to transcribe the remaining data manually, ensuring better accuracy by listening to the audio files multiple times and correcting errors.

Once the transcription was completed, I translated the data into English. To ensure accuracyand trustworthiness, both the original and translated transcripts were shared with the teachers for their review. The data from various sources—interviews, focus groups, and observations—were systematically categorised to facilitate triangulation in the subsequent analysis phase. Handling multilingual data (Indonesian and Sundanese) posed challenges during transcription and

translation. These were mitigated through manual verification. Additionally, while organising the data, I noted recurring references to community involvement and contextual learning, which informed the initial ideas for coding. All data were organised and saved in Microsoft Word and Excel to facilitate easy access and future coding. This stage of organising and preparing the data laidthe foundation for further in-depth analysis.

4.6.2 Reading through the data

After organising the data, I conducted a thorough read-through of all the transcriptions, focus group discussions and observational notes to gain an overall understanding of the content. This process allowed me to immerse myself in the data and helped me identify initial ideas and potential patterns. As I read the data multiple times, I began noting recurringconcepts such as *community connection* and *hands-on learning*.

In this second step, I also reflected on the research questions and conceptual frameworks, such as the model integrated CPoP and CCT, understanding CCT and CPoP, and ensuringthat the analysis stayed focused on the core objectives of the study. This familiarisation process helped build a deep understanding of the data, which served as the foundation for the subsequent coding and analysis steps.

4.6.3 Coding the data

In this step, initial codes were produced across the entire dataset. I manually coded each piece of data (see Appendix 8 for a sample of data analysis). Relevant features, teachers'reflections on their student's engagement with the local environment, or strategies for fostering CCT of the data were highlighted, and these initial codes were organised to captureinteresting aspects of how teachers adapted CPoP principles in their lessons or the challenges they faced in implementing creative thinking strategies in the classroom. Initially, Iemployed a deductive approach, where I drew codes directly from the research questions and the existing literature on CPoP and CCT (Maguire & Delahunt, 2017). This involved using predefined codes based on themes identified in the literature review, such as environmental awareness, community engagement, real-life experiences, social awareness, and cultural heritage. For example, when analysing interview transcripts, I actively looked for instances where teachers mentioned practices or concepts aligned with these predefined themes.

After the initial coding, I transitioned into a more inductive process, where I allowed the data to speak for itself without being constrained by the predefined codes (Linneberg & Korsgaard, 2019; Saldaña, 2016). This shift occurred after I had completed the first round of deductive coding, where all the predefined codes had been applied to relevant data. At this stage, I began reading through the transcripts again, paying attention to any patterns, ideas,or issues that naturally emerged from

participants' narratives. For example, I discovered themes related to teachers' adaptation to different curricula and strategies for student engagement, which had not been part of the predefined coding framework. These emergentthemes led to the development of new codes that were not initially anticipated.

However, I also applied a general inductive process where I remained open to the emerging codes or themes in the excerpt (Maguire & Delahunt, 2017; Nowell et al., 2017; Thomas, 2006). This allowed the data to speak for itself without being constrained by the predefined codes (Linneberg & Korsgaard, 2019; Saldaña, 2016). Reviewing the transcripts with the teachers and other data sources, I noticed recurring topics and issues emerged naturally from the participants' narratives. These emergent themes led to the development of new codes that were not initially anticipated. For example, while analysing the transcripts, themessuch as *teachers' adaptation to different curricula* and *strategies for student engagement* emerged organically from the data.

During the open coding phase, I iteratively developed or modified codes, integrating those derived from the literature and research questions with new ones identified through the inductive process (Linneberg & Korsgaard, 2019; Thomson, 2022). This approach enabled athorough data exploration, capturing both anticipated and unanticipated patterns as I remained open to the emerging data while staying attuned to the existing themes. With each excerpt that was perceived to be most relevant to the research objective and relevant research questions, new codes were generated, and existing ones were modified. For example, I coded segments of the interview transcripts with labels such as community engagement, real-life experiences, and empathy and social skills, highlighting specific quotes aligned with these concepts. To ensure the trustworthiness of this process, I sought external input from my supervisors for peer review and debriefing of the initial coding (Morse, 2015).

4.6.4 Generating themes

During the search for themes, codes were aggregated into potential themes, gathering all data relevant to each potential theme (See Appendix 8 for a sample of data analysis). This step involved a detailed analysis of how different codes could be combined to form key themes representing the data. I engaged in an iterative process of revisiting the codes, constantly reviewing and refining the initial themes to ensure they accurately captured the essence of the data (Linneberg & Korsgaard, 2019). As part of this process, some themes were merged if they overlapped, while others were split to represent the nuances within the data better. This phase required careful consideration to ascertain that the themes were coherent, distinct, and adequately covered the breadth and depth of the dataset. For example, codes related to *community engagement* and *collaborating with parents* were combined to form the theme of *collaborative and community engagement*. Similarly, codes like *practical learning in an environment* and *care for the environment* were grouped under the theme of *environmental awareness*. To augment the rigour and validity of the analysis, I

engaged in researcher triangulation by discussing and consulting the identified themes withmy supervisors, ensuring multiple perspectives were considered. Each theme was reviewed to ensure it was distinct, consistent, and adequately captured the breadth and depth of the dataset.

4.6.5 Interpreting themes and descriptions

In this phase, I began interpreting the identified themes in relation to the broader research context. This involved linking the themes to the study's research inquiries and conceptual framework. I explored how each theme reflected the participants' experiences with implementing CPoP and stimulating CCT in their classrooms.

For instance, the theme of environmental awareness was interpreted as promoting responsibility, active participation in environmental protection, and raising environmental awareness. I also used quotes from the participants to provide rich, descriptive insights thatillustrated how the themes were expressed in real-life teaching contexts. To enhance transparency and clarity, the following table provides an excerpt from the thematic analysis process, illustrating how raw data were coded, categorised, and developed into themes. This example highlights how I analysed and interpreted the data:

Theme	Coding	Interview Excerpt	Focus group discussion insight	Classroom observation note	Document analysis findings
Encouraging environmental awareness	Teacher's objective	"I want them to notice the detail of their environment, understand the importance of preserving it..."	Teachers discussed ways to foster ecological awareness through hands-on activities, e.g., clean-up projects.	Students participated actively in a community clean-up project, showing curiosity about environmental impact.	Lesson plans included activities encouraging reflection on local ecological challenges.
	Engage the students' Interest	"When they wan to explore something they are curious about..."	Teachers reflected on using the school environment and visuals to stimulate curiosity in students.	During a recycling activity, students examined materials around the school and asked questions about their purpose and reuse	Curriculum emphasises environmental care.

This table illustrates how I arrived at the themes and provides context for how the participants'

voices were reflected in the findings. It demonstrates the triangulation of insights across multiple data sources, ensuring the credibility and consistency of the thematic analysis. This approach shows how CPoP principles were implemented to foster CCT in teaching practices, aligning with the study's conceptual framework.

4.6.6 Validating the accuracy of the information

Throughout the analysis, I ensured transparency and trustworthiness by validating the accuracy of the data. This involved sharing the interpreted themes and findings with the participants for member checking, giving them an opportunity to verify or clarify the accuracy of the interpretations. I also engaged in triangulation, cross-referencing findings from interviews, focus groups, classroom observations and document analysis to ensure consistency and reliability across different data sources. For example, the theme of *environmental awareness* emerged consistently across interviews and focus groups, enhancing the credibility of the analysis. By validating the information at multiple stages, Iensured that the findings precisely reflected the participants' viewpoints and experiences.

4.6.7 Reporting the findings

The final stage involved writing up the findings and producing a report. In this stage, I selected data extracts to illustrate each theme, ensuring they directly related to the research questions and were grounded in the existing literature. For example, the theme "Encouragingenvironmental awareness" was illustrated with Pina's quote:

> I hope they become more aware of their surroundings. I want them to notice the details of their environment, understand the importance of preserving it, and feel a sense of responsibility towards it. It's not just about seeing what's around them but appreciating and understanding how their actions, no matter how small, can impacttheir community and the natural world.

This quote reflects the teacher's intention to cultivate both environmental awareness and a sense of responsibility, key components of the theme. It aligns with the broader goals of PBE by emphasising the importance of helping students develop a deep connection to their surroundings and understand the interconnectedness between human actions and the environment.

In addition, a document analysis was conducted to compare patterns found in the data from interviews, focus group discussions and classroom observations. For instance, the theme "Encouraging Environmental Awareness" emerged from multiple data sources. Duringan interview, Pina expressed, *"I hope they become more aware of their surroundings. I want them to notice the details of their environment and understand the importance of preserving it."* Her opinion was echoed in the focus group discussions, where several teachers shared similar views about fostering environmental responsibility among their students.

Classroom observations further validated this theme, where teachers were seen incorporating activities like observing the school environment to help students engage with their local environment. For example, one teacher encouraged students to document environmental issues at their school, consistent with the teachers' discussions in the focusgroup discussions.

Finally, the document analysis of school-written materials and policy documents from the Indonesian Ministry of Education revealed that the emphasis on environmental awarenessaligned with broader educational goals, specifically CCT, outlined in national curriculum guidelines. By using triangulation—cross-referencing data from interviews, focus group discussions, classroom observations, and document analysis—the study ensured that thefindings were robust and supported by multiple data sources (Carter et al., 2014).

4.7 Ethical consideration

Ethical considerations are crucial for ensuring the research's integrity, reliability and societalvalue (Fleming & Zegwaard, 2018; Head, 2020). The protection of research participants is paramount in preventing any harm, whether physical, psychological, social or educational (Olaniran & Baruwa, 2020).

First, the study received research ethics approval, which served as the legal foundation for conducting the research (see Appendix 6).

Second, informed consent is a cornerstone of ethical research (Fleming & Zegwaard, 2018; Manandhar & Joshi, 2020) (see Appendix 7). The teacher participants were fully informed about the objectives, methods, potential implications of the study, and their rights as participants. The informed consent form was emailed to them, and they returned it with theirsignatures, indicating their voluntary participation. They were also appraised of their right to withdraw from the study at any time. Consequently, some teachers chose to leave the study as their participation depended on their availability and willingness to continue until the program ended.

Third, confidentiality and anonymity are critical ethical concerns (Crow & Wiles, 2008; Hoft, 2021). Some information in this study is sensitive and could potentially impact individual's personal or professional lives. Hence, I am responsible for safe guarding participant identities and ensuring data are handled securely. Anonymity is maintained unless explicit consent has been given and data are reported in a way that the teachers cannot be identified.

Additionally, data storage and sharing protocols comply with legal and institutional regulations and Flinders University regulations, respecting the privacy and rights of all participants.

4.8 Trustworthiness of the data

Ensuring trustworthiness in this study is crucial, particularly as it is a qualitative study aimingto provide an in-depth understanding rather than numerical precision. Trustworthiness refers to the quality, authenticity, and reliability of the data collected, and the conclusions derivedfrom it (Patton, 2002). It encompasses several key components: credibility, dependability, confirmability, and transferability (Merriam & Tisdell, 2016).

Credibility was established by ensuring the research findings accurately represent the participants' experiences and viewpoints. To achieve this, I engaged in interaction with the teachers during classroom observations, focus group discussions and semi-structured interviews. I also employed triangulation by collecting data from multiple sources, including interviews, observations and student work. Various data sources are used to ensure the faithfulness and trustworthiness of this research (Efron & Ravid, 2013). The engagement andpersistent observation in the field helped me acquire a more profound insight into the contextand build trust with participants, leading to more authentic and reliable data. I kept the raw data, transcripts, teachers' and students' artefacts to help myself systemise, relate and cross-reference data (Nowell et al., 2017)

Additionally, I offered the opportunity for member checking by sharing interview transcripts and preliminary findings with the participants. Member checks were conducted asa means of data validation and to enhance rigour in qualitative research (Birt et al., 2016).

The participants were invited to review and verify the accuracy of my interpretations. Most participants said they trusted my understanding and were comfortable with the transcripts as presented, offering no additional feedback or corrections. While this limited the active verification process, it demonstrated the participants' trust in my interpretation of their responses.

Dependability was ensured by consistently documenting the key steps and decisions made throughout the research process (Kakar et al., 2023). Although a formal audit trail was not kept, I recorded important aspects of the study, such as changes in the research context andthe rationale behind significant decisions. For example, when one of the participants was unable to attend a scheduled focus group discussion owing to a scheduling conflict, I decided to conduct a one-on-one interview with that participant instead. This decision was made to ensure the participant's input was still included while preserving the integrity of the data collection process. Such adjustments were documented to provide transparency in how the study adapted to evolving circumstances, ensuring the research process remained dependable (Stahl & King, 2020).

Confirmability was achieved by ensuring that the findings were shaped by the participants' responses and not swayed by my personal preferences (Kakar et al., 2023). To maintain objectivity, I used field notes throughout the study to document my observations, thoughts and

reflections on the research process. This allowed me to be aware of any potential biases as they arose. I also ensured transparency in the data analysis by carefully documenting howI organised and interpreted the data. For example, during the thematic analysis, I created codes based on recurring themes in the participants' responses and kept a record of how and why specific codes were assigned. When faced with ambiguous data or multiple possible interpretations, I referred back to the original transcripts to ensure that my interpretations remained true to the participants' intended meanings. This helped ensure thatthe findings accurately reflected the participants' perspectives.

Finally, transferability, defined as the degree to which findings can be utilised in different contexts, is enhanced by the comprehensive descriptions of the research context and assumptions included in this chapter, allowing others to evaluate the relevance of the findings to their circumstances (Creswell, 2018).

4.9 Limitations of the study

One key limitation of this research is the restricted time frame imposed by the PhD program's duration. Action Research (AR), particularly in its community-based and participatory forms, typically involves iterative cycles of planning, acting, observing, and reflecting, often spanning several years (Kemmis et al., 2014; Zuber-Skerritt & Perry, 2002). Although AR is ideally an ongoing process, conducting AR over an extended period was not feasible due to the practicalities of completing the PhD within a specific timeframe. Zuber-Skerritt and Perry (2002) recommend that in the context of a PhD, AR cycles should be limited to a maximum of one-third of the overall candidature period to ensure that the research remains manageable within the constraints of doctoral studies while still allowing for meaningful cycles of action and reflection.

In this study, I conducted only two AR cycles, which, while allowing for some meaningful iterative professional learning and reflection among the participating teachers, may have limited the depth of long-term observation and the exploration of sustained impacts. More cycles could have provided more profound insights into the evolution of the CoP and the long-term effects of the CPoP on the teachers' practices. Despite these constraints, the two cycles were sufficient to initiate meaningful changes in the teachers' understanding and implementation of CPoP, aligned with the minimum recommended by Zuber-Skerritt and Perry (2002) for effective AR within a PhD study.

In addition to the time constraints, monetary considerations posed challenges as funding was limited, restricting resources for travel, materials and other logistical aspects for me as a researcher. Furthermore, limitations were related to the availability and willingness of the participants, many of whom faced time restrictions due to their busy teaching schedules, impacting their ability to fully participate in all aspects of the study, such as interviews, focus groups and

classroom observations.

Finally, language may also be a restrictive condition during the process of translation. During data collection, the language used to communicate was Bahasa Indonesia and the local language, Sundanese. On the other hand, the process of translating the languages to English for some parts of the data could make it difficult to find the right match. I committed to attenuating this limitation by establishing a good rapport with the participants before, during and after the data collection and by being open and honest and checking with them for potential differences in interpretations throughout the data collection and analysis process.

4.10 Summary Of Chapter

This chapter outlined the methodological framework I used in the study, which explored how 12 primary school teachers in Bandung engaged with TPL to implement CPoP and promote CCT in their students. The research design is grounded in pragmatic social constructivism, emphasising collaborative knowledge construction through real-life application. I adopted a qualitative research approach to capture teachers' complex interactions and experiences asthey engaged in TPL to improve their pedagogical practices.

The research was conducted in 12 public primary schools in the BMA, Indonesia. These schools were chosen for their diverse geographical, social, and environmental contexts, providing a rich setting to explore the implementation of CPoP. Schools were located across Bandung's northern, southern, eastern and western parts, each offering unique challenges and opportunities related to local environmental and social conditions. This diversity helped illustrate how place-based pedagogy can be adapted to various community contexts. My prior connections within the local educational community facilitated the selection of the schools.

I utilised CoP combined with AR methodologies. This collaborative framework supported teachers in learning from each other, reflecting on their classroom practices, and addressing challenges in implementing CPoP. The iterative AR cycles – planning, acting, observing and reflecting – structured the process of continuous professional growth and pedagogical refinement. The community-based AR approach, emphasising participatory and reflective processes, was particularly suited to the complex and evolving educational settings in Bandung. Figure 4.15 below illustrates how the CoP was combined with AR, which I adaptedfrom Burns et al. (2011).

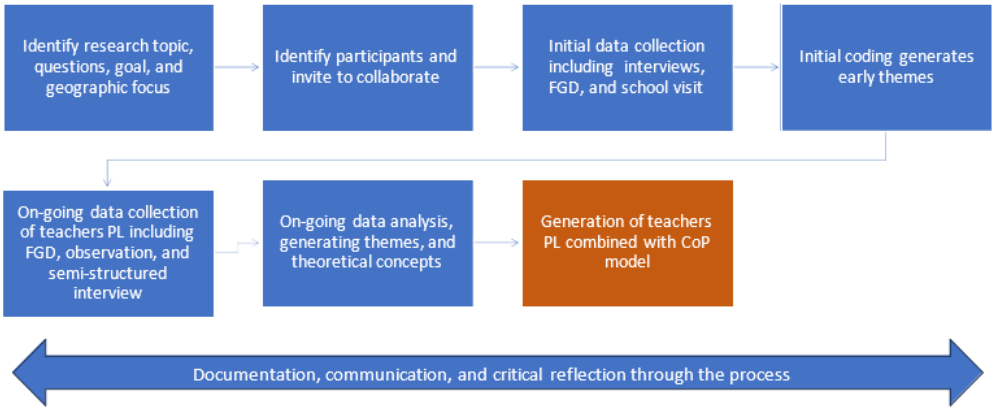

Figure 4.6 The community of practice combined with action research employed (modification from Burns et al., 2011)

Regarding my role in this study, I acted as an insider and an outsider. As an insider, I shared cultural and professional contexts with the participants, building trust and facilitating deeper engagement. As an outsider, I maintained an objective stance, particularly during data analysis and classroom observations, ensuring reflexivity and critical distance to avoid bias.

Data collection methods encompassed semi-structured interviews, focus group discussions, and classroom observations, providing an understanding of the teachers' experiences and reflections on the integration of CPoP and CCT. I applied thematic analysis to interpret the data, identifying recurring themes that highlighted the impact of the TPL program on teaching practices and student learning. I also addressed ethical considerations, such as informed consent, confidentiality and member checking, to ensure the reliability and validity of the research.

CHAPTER 5: STUDY 1: TEACHERS' INTENTIONS AND UNDERSTANDING OF CRITICAL PEDAGOGY OF PLACE AND CRITICAL ANDCREATIVE THINKING THROUGH TPL

5.1 Introduction

This chapter presents the results and discussion of the findings from Study 1, which focused on understanding the teachers' intentions in implementing CPoP and how they understood CCT within the TPL program. Combining the results and discussion in this chapter reflects a methodological choice to provide a deep and integrated analysis (Novianti, 2023). By presenting the data alongside the interpretation within the frameworks of CoP and CPoP, this approach allows for a deeper, more immediate contextualisation of the findings. Such an approach can be practical in qualitative research, where the meaning of the data is closely tied to the context in which it was collected and analysed (Creswell & Guetterman, 2018; Merriam & Tisdell, 2016; Wolff et al., 2019).

I explained in Chapter 4 that I adapted CoP for the TPL program. By participating in a CoP, it was foreseen that teachers in the TPL would be exposed to new ideas and methods and gain support for experimenting with innovative approaches in their classrooms. Additionally, it was anticipated that this supportive network would be essential for sustaining changes in teaching practices as it provides a platform for continuous dialogue, reflection and mutual encouragement (Wenger, 1998; Wenger-Trayner & Wenger-Trayner, 2015). The concept of CoP includes social and collaborative learning in environments where educators can share insights, challenge each other's thinking, and collectively refine their practices, which situates TPL. The TPL program, central to this research, was designed as a CoP to enhance teachers' ability to implement CCT through a CPoP lens. CPoP became a model to support learning, emphasising the significance of connecting learning to the local context, culture, and environment, making education more relevant and meaningful for students (Bowers, 2002; Gruenewald, 2003b).

The findings were derived using thematic analysis, as outlined by Creswell (2009). The data collected from the interviews and focus group discussions were coded, a process described earlier in Chapter 4, to uncover themes related to teachers' intentions and understanding. The following section depicts the findings and a discussion about the teachers' intentions toimplement CPoP, followed by a findings and discussion section focusing on how the teachers understood CCT. All the names are pseudonyms to protect the anonymity of the participants and maintain ethical standards.

5.2 Teachers' intention to implement critical pedagogy of place

This section explores teachers' intentions in implementing CPoP and CCT. Using thematic analysis, six key themes were identified and developed through an iterative process, which involved coding data from interviews and focus group discussions, as explained in Chapter 4.This iterative process allowed for the refinement of the themes to best capture the teachers' motivations and approaches to adopting CPoP in their teaching practices (Braun & Clarke, 2006). The six themes were encouraging environmental awareness, building social awareness, engaging CCT through real-life experiences, collaborating with the community, connecting with cultural and local wisdom, and the challenges teachers face in implementing these approaches. The following subsections present and discuss these themes, drawing on insights from interviews and focus group discussions with 12 teachers in BMA.

5.2.1 Theme 1: Encouraging environmental awareness

The first theme highlights the teachers' intentions to cultivate students' understanding and appreciation of their local environment and the issues surrounding it, as suggested by Dimick (2016) who states, "place-specific environmental learning can both inform learners' understandings and influence their actions" (p. 816). This intention aligns closely with the core premise of CPoP, which emphasises the importance of PBE in fostering students' consciousness about their local contexts (Kelly & Pelech, 2019). The teachers were committed to helping students develop a sense of responsibility towards the environment.

They also promoted active participation in its preservation, reflecting CPoP's emphasis on connecting learning to real-life experiences and local contexts; as Kelley and Pelech (2019) states, "CPoP creates opportunities for students to bond with the local environment and, as a result, to develop a sense of love and care for the natural world" (p. 733).

Environmental awareness emerged as one of the priorities for teachers in implementing CPoP. Teachers indicated a desire to raise students' awareness of their local environment,foster a sense of personal responsibility and encourage proactive engagement in environmental protection. For instance, Pina shared:

> I hope they become more aware of their surroundings. I want them to notice the details of their environment, understand the importance of preserving it, and feel a sense of responsibility towards it. It's not just about seeing what's around them but appreciating and understanding how their actions, no matter how small, can impacttheir community and the natural world.

In my observation notes, I indicated that Pina had a perspective that students must be awareof their surroundings. She expected the students to observe the environment in detail and build a sense of responsibility towards their environment. Pina's statement reflected the intention of

instilling in students an ecological consciousness and a sense of care for their immediate surroundings through observation, which aligns with Gruenewald's (2003a) concept of reinhabitation. Reinhabitation highlights the idea of emphasising the need for students to learn to live responsibly within their local environments. Through her reflection, Pina aims to promote a sense of stewardship, where students view environmental care aspersonal responsibility (Hamilton & Marckini-Polk, 2023).

However, while Pina's approach encourages students to be aware of their surroundings, it might be seen as a starting point rather than an endpoint in developing environmental awareness. The focus on observation could be interpreted as promoting a more surface-levelengagement with the environment (Ellen et al., 2014). It raises the question of whether the observation alone can lead students to analyse or challenge the depth of environmental issues. This indicates that while Pina's method may be valuable for raising ecological awareness, additional strategies seem to be needed to move students towards a more critical engagement, one that prompts them to explore, question and address environmental challenges actively (Nazir & Pedretti, 2016).

In addition to encouraging environmental awareness, the teachers encouraged the students to actively participate or engage in environmental protection (Hadjichambis & Paraskeva-Hadjichambi, 2020). Teachers believed engaging students in activities, such as local clean-up efforts, would help them see their actions' direct impact on the environment (Yannier et al., 2021). Dewi, for example, described:

> My goal is to encourage students to be more active and participative, like cleaningup our school neighbourhood … if we engage them in their environment and support them to think of it as a learning opportunity rather than just a play area, they will start to see it as a source of knowledge as well. When they are curious about something and want to explore it, it will be easier to understand when they actively participate in their environmental activities.

This excerpt shows that Dewi encouraged the students to participate in the learning process.She also attempted to apply experiential learning as the process of learning through experience (Wooding, 2019). Dewi also suggested reframing the students' perspective to perceive their environment from just a play area to a source of knowledge to make them become critical thinkers. These findings align with my research findings, which support the PBE principles articulated by McConnell Moroye and Ingman (2018). The findings highlight the importance of engaging students in local environments to foster deeper connections withtheir surroundings. Rani provided another aspect of teachers' intentions in raising environmental awareness by helping students become more conscious of their surroundings and how they interact with all living creatures in their environment. Rani stated, "They develop their awareness of their surroundings, with the people, other beings and nature". This reflects Rani's efforts to introduce ecological awareness (Cicchino et al., 2023) to students, encouraging them to understand the relationship between their actions and the broader environmental impacts(Gruenewald, 2003a).

These findings suggest that the three teachers (Dewi, Pina and Rani) supported the implementation of CPoP. They all focused on implementing CPoP, especially in the context of environmental awareness. However, they implemented CPoP with different emphases. Dewi specifically emphasised experiential learning, Pina stressed proactive engagement through detailed observation of the environment, while Rani paid attention to ecological awareness. Overall, these findings answer the first research question (what are teachers' intentions in implementing CPoP?); it is making the students able to experience their environment, observe their environments and have the ability to adapt ecologically (Cicchino et al., 2023).

5.2.2 Theme 2: Building social awareness

The theme of building social awareness encompasses teachers' efforts to help students understand and appreciate the diversity within their classroom and community (Powell & Lines, 2010), as well as to develop empathy and respect for others (Husain, 2021). This involves encouraging students to be mindful of different perspectives and experiences and fostering a sense of connection with their social environment (Witwer & Wilkins, 2019).

Pina expressed her intention to celebrate diversity through activities that highlight the uniqueness of each student's background (Agostinetto & Bugno, 2020; Durand, 2010). For instance, she plans to have students share their family stories and collaboratively create a Family Tree wall in the classroom. She stated:

> after sharing their family stories, we'll have the students work together to create a'Family Tree' wall in the classroom …This activity will help students see the diversity in their classroom and how each family is unique as part of a larger community. We'll also encourage them to write or draw something they learned from their friends' stories, which helps reinforce the idea that learning from each other's experiences is valuable.

In her planning, she aimed to make students aware of the diversity within their classroom and recognise the uniqueness of each family. This activity fosters a sense of community by highlighting how everyone contributes to the discussion in the classroom. She raised students' social awareness by making them mindful of their peers' diverse backgrounds and experiences (Powell & Lines, 2010), which aligns with CPoP in connecting learning to the student's social and cultural context, such as the Indonesian philosophy of diversity *Bhinneka Tunggal Ika* (Unity in Diversity), which highlights the idea that Indonesia, despite its vast cultural, ethnic, linguistic and religious diversity, remains united as a single nation.

Mia took a different approach by using local stories and folklore to teach values and lessons related to social awareness (Syeed, 2020). She addressed specific behavioural issues in her classroom, such as students teasing each other and showing a lack of respect:

> I plan to use local stories and folklore to teach values and lessons relevant to our environment. Storytelling with social awareness helps students to understand and

> empathies with social issues. The issue in my class is that the children often teaseeach other and don't respect their peers … the students mock or insult their peersby calling out their parents' names … I use stories from the community to discuss,making lessons more relatable and impactful.

Mia's approach involved practical learning to use cultural storytelling to foster empathy and social awareness, as suggested by Aramudin and Susanti (2024). She wanted her studentsto see the relevance of the lessons to their own lives and put themselves in others' shoes, which might foster empathy.

Pina and Mia's methods reflect their intention to foster social awareness in their students by connecting to their local context and cultural experiences. Pina's implementation of family tree sharing helps students appreciate the diversity in their classroom, promoting a sense of community through supporting each other during the building tree activities and getting to know each other's family. Mia's use of local stories to teach values and address teasing encourages students to understand and respect others. These activities are engaging and allow students to learn through each other's experiences of classroom interaction, which can increase empathy and awareness (Husain, 2021). Nevertheless, these activities might need to be developed to build a substantial understanding of social issues. Pina's focus on celebrating diversity is positive but might not lead to discussions about the more complex aspects of cultural differences or social inequality. Mia's storytelling could also use higher- order thinking skills by asking questions that encourage students to reflect critically on the moral, social and political implications of the stories. For example, she could ask students toanalyse the actions of characters, question the underlying themes, and relate the lessons to their own lives or broader societal issues. In line with a suggestion from Syeed (2020), "narrative and storytelling can be used as empowering tools for students of political and social change", Mia could ask questions like *why do you think the character made that decision? what might have happened if they chose differently? do you agree with the character's actions? why or why not? how would you handle a similar situation? can you think of a time when you faced a similar situation? what did you do?*

Hence, It is important to use storytelling to engage young learners to help them understand the complex issues around them (Harris & Manatakis, 2013; Putri, 2018; Setyarini et al., 2018).

5.2.3 Theme 3: Engaging in critical and creative thinking through real-life experiences

This theme centres on teachers' intentions to promote CCT by using real-life contexts and experiential learning (Asyari et al., 2021; Bansal & Nagpal, 2015; Laware & Walters, 2004). It involves making learning relevant and directly connected to students' lives. Teachers articulated the importance of students applying their learning to real-life situations, which was a form of translation to CCT (Carvalho et al., 2015). Susi and Pina expressed a strong belief in the

transformative potential of CCT. Susi, for example, emphasised the importance of identifying and solving environmental problems:

> CPoP will foster new ways of thinking about the students' environment. By encouraging them to engage with their surroundings, CPoP helps them develop new perspectives and approaches to problem-solving. This kind of thinking is crucial for addressing the unique challenges they may face in their life. So, beingcritical is when children can identify what's happening in their environment. Whatproblems are there? And being creative is about thinking 'What should we do?' That means thinking about solutions, learning about the possible solutions.

Susi intended to encourage the students to be involved with their surroundings to promote CCT. She related CCT to identifying environmental problems, and for CCT to work, it does not only offer a solution, but the solution should be feasible (Birgili, 2015; Kousoulas & Mega,2007; Park et al., 2021).

Pina anticipated that CPoP would encourage students into deeper thinking about the school garden, as seen in her example of caring for a school herbal garden, where she noted:

> It will encourage them to think deeply about what they see and do daily. For example, when we talk about taking care of our school herbal garden, they'll ask questions like, 'Why do we need to water the plants every day?' or 'Why do we need to plant this?' This way, they're not just following instructions; they're also learning to think and coming up with their own ideas. It will help them become morecurious and creative in finding solutions to problems.

Both teachers encouraged students to be able to think for themselves, rather than just following instructions in doing tasks. By doing this, they hope to foster new ways of thinking and deeper inquiry. Yet, by doing so, I see that the students' CCTs were not developing because they focused on following instructions instead of enquiring about planting herbs. This demonstrates the teacher's superficial understanding of CCT (Nagashibaevna, 2019).

Developing students' CCT can also be motivated through solving local issues (Netto-Shek,2017; Rodd, 1999). For example, Fira envisioned students taking active roles in their community in identifying and solving problems:

> They'll identify and solve local issues. I envision my students taking an active role in their community by identifying problems and developing solutions. Whether it's something small like organising a clean-up or something larger like creating awareness campaigns, I want them to be involved in making their community a better place.

Fira demonstrated her commitment to empowering students to identify and solve problems by providing diverse engagement opportunities, such as organising clean-up projects, awareness campaigns and other collaborative learning activities, allowing them to participatein a wide range of activities, from simple to more complex community initiatives (Maker et al.,2015). She has some great ideas but lacks the specific strategies required to convert these concepts into practical

actions. This highlights a critical aspect where the TPL program offersenhanced assistance, concentrating on mentoring teachers like Fira in organising CCT and CPoP lesson plans and implementing them in the classroom.

Mia provided a feasible approach, using storytelling to stimulate exploration, questioning and reflection. She outlined a method where she started with a story and discussed the moral values of the story with her students. The engagement encouraged students to explore and reflect on the moral values of the story, making her method more robust for engaging CCT through real-life experiences, as highlighted by Maker et al. (2015). Mia expressed her intention through the following statement:

> It will stimulate critical and creative thinking by encouraging them to explore, question, and reflect on their environment and experiences. I plan to start by only reading the title or showing a picture of *Si Kabayan*. The goal is to stimulate the children to ask questions about the story they are about to hear or the picture they see. After telling the story, I ask the students to reflect on how *Si Kabayan* might have felt when he was mocked and how the rich man and his guests felt when theyrealised their mistake. We discuss why it's important to treat everyone with respectand kindness.

While all teachers shared a belief in the potential of CPoP to promote CCT, their approaches often lacked the structured strategies needed to move from idealised intentions to practical outcomes (Zimmerman & Weible, 2017). Susi and Pina focused on the potential benefits without providing concrete implementation plans. Fira emphasised engagement and development but needed more detailed methods for collaborative projects. On the other hand, Mia offered a good plan through storytelling and guided reflection, but her approach relies on her ability to engage the students in exploration and reflection. This indicates a need for guidance and reflection to realise the transformative potential of CPoP in practice.

Overall, the teachers' intentions align with CPoP's goals, but there is a gap between their vision of CPoP and CCT lessons and how to ensure successful implementation of them.By developing specific strategies and reflective practices through CoP, they can effectively implement lessons that support students' CCT development in the future (Maker et al., 2015).

5.2.4 Theme 4: Collaborating with the community

This theme reflects the teachers' intentions to involve the local community in their teaching practices, thereby recognising the value of community resources and partnerships in enriching students' learning experiences (Smith & Sobel, 2010; Vander Ark et al., 2020). By engaging with parents, local experts and community leaders, they aim to foster teamwork, community involvement and a sense of collective responsibility among students.

Susi sees the value in integrating local community practices, such as *kerja bakti* (communalwork) and *ronda* (night watch), into classroom learning:

> Yes, for example, like *kerja bakti* (communal work, something that's already common in our community). And *kerja bakti* is not just about cleaning the environment. In my place, *kerja bakti* even extends to building a *saung* (a traditionalhut) for the men to gather during *ronda* (night watch). Especially during the pandemic, the *ronda* became more frequent, ma'am, because we were afraid of outsiders coming into the neighbourhood and bringing disease. So, they really checked everyone. So, ma'am, *kerja bakti* and then *ronda* are activities in our community that are very positive … If the children see these activities and then we discuss them in class, and later the children can participate in these activities, it would be even better, right, ma'am? Eventually, they would not only understand thepositive aspects of the community's culture, but the children would also learn to contribute.

Susi wanted to use community activities, like *kerja bakti* and *ronda,* to teach students about their culture and social responsibility. She thought that by getting students involved in these activities, they would learn to appreciate their cultural heritage, which is supported by Stevenson and Dillon (2010). However, Susi seemed to assume that just participating in *kerja bakti* and *ronda* would be sufficient for students to understand and value these practices. It is the teachers' role to create lessons that provide the students with these opportunities, such as deep discussions and reflections, because, in Grade 1, the students cannot independently do that (Aderibigbe, 2021; Nelson Laird et al., 2014).

Ana emphasised the importance of collaboration with community leaders and organisations to create projects that benefit students and the community. She stated:

> Work with community leaders, like the neighbourhood heads and youth groups. By collaborating with local leaders and organisations, we can create projects that benefit the community and provide students with the support they need to succeed.

Ana focused on forming partnerships with local leaders to enhance students' learning. She recognised the value of using community resources to support student learning and development, aiming to create mutually beneficial projects (Hausburg, 2020; Johnson, 2011).She involved external partners for student development and aligning learning goals with community needs (Hodson, 2011). However, while Ana highlighted the importance of collaboration and resource utilisation, she did not provide details about how these partnerships could be implemented or how they could be integrated into the students' learning process. To fully realise the potential of community collaboration, there needs to be a clear plan for how these partnerships will directly contribute to the development of students'CCT skills.

Susi and Ana demonstrated a commitment to involving the community in their teaching practices, reflecting an understanding of the value of community resources in enriching students' learning, as supported by scholars (Elbaz, 2023; Smith & Sobel, 2010; Sugg, 2015). Susi used local practices to transfer cultural values in the community to students'learning. Meanwhile, Ana emphasised collaboration with community leaders to support learning projects. Accordingly, both approaches assumed that involvement with the community could lead to positive learning outcomes specifically

to students' CCT.

Susi assumed that participation in community activities could foster CPoP and CCT understanding. Still, this approach might benefit from incorporating learning processes, such as guided discussions or reflective activities, to help students critically engage with these practices and understand their cultural values. Similarly, Ana highlights the potential of community partnerships by involving community leaders in creative activities but needs to provide specific strategies for integrating these collaborations into classroom learning to foster CCT.

5.2.5 Theme 5: Connecting with cultural and local wisdom

This theme focuses on teachers' intentions to integrate cultural heritage and local knowledgeinto their pedagogical practices. It involves acknowledging and valuing the cultural and historical context of the community. Susi chose a traditional food project to connect students with their cultural heritage (Darusman, 2020). She explained:

> I chose the traditional food project because it connects students with their cultural heritage and teaches them the importance of preserving traditions. Cooking together allows students to learn valuable life skills, appreciate the diversity within their community, and understand how food plays a role in bringing people together.It's a hands-on way to explore culture and history while fostering a sense of pride intheir local identity.

Susi's approach used a hands-on activity – cooking traditional food – to help students explore and appreciate their culture. This method introduced students to cultural practices and taught valuable life skills such as cooking, integrating cultural learning with practical applications (Darusman, 2020; Sudaryat & Nurhadi, 2023). While the activity was engaging and relevant, there was an assumption that this experience alone would deepen students' understanding of CCT and CPoP. This could help students reflect on why traditional food is important to their community compared to modern fast food. In addition, the students learnedhow to cook traditional food from an expert, the chef of traditional food (Hodson, 2011).

Rani incorporated *angklung*, a traditional Sundanese musical instrument, into her teaching to introduce students to cultural values while aligning with the *Merdeka* curriculum. She said:

> *Angklung* introduces students to cultural values and helps them play a traditional instrument. Because it is based on project themes in the *Merdeka* curriculum, and I want to motivate collaborative work as part of project-based learning. Playing *angklung* requires coordination and sensitivity to create harmony among players.

Rani's method of using *angklung* provides a way for students to learn about cultural values through learning the history of *angklung,* how to make *angklung* and collaboratively playing *angklung* in harmony. By incorporating PBL, she aims to make this a collaborative experience, fostering teamwork and coordination (Bell, 2010; Putri et al., 2019; Shofa, 2021).This approach connects

cultural education with the practical skill of playing an instrument, making learning engaging and meaningful. This musical presentation would encourage students to actively engage with the cultural significance of the instrument, and the students were allowed to freely explore the possibilities of the instruments, which encouraged them tobe creative. They were also invited to design and make their own version of traditional food and take part in the process of cooking traditional food (Jensen et al., 2011).

Susi and Rani intended to connect students with their cultural heritage through engaging, hands-on activities (Hess, 2022). Susi mentioned cooking traditional food helps students learn valuable life skills and appreciate the diversity within their community. Rani talked about using the *angklung* to introduce students to cultural values and to foster collaboration and teamwork. While these activities are valuable and engaging, their descriptions do not mention additional steps, such as reflective discussions. This suggests an opportunity to further enhance students' understanding by integrating activities that encourage students tothink more deeply about the cultural significance of these traditions. For instance, incorporating a storytelling session could trigger the students' curiosity to raise questions orpredict the next scene in a story (Collins, 2016).

5.3 Teachers understanding of critical and creative thinking through TPL

The following sections present the three themes related to teachers' understanding of CCT:their comprehension of CCT terms, the application of CCT in the classroom, and the recognition of spontaneous teachable moments. These themes emerged from analysing the data gathered through interviews and focus group discussions during the TPL program.

5.3.1 Theme 1: Understanding critical and creative thinking terms

Nina reflected on a common misconception by associating critical thinking with criticism, stating, "From what I know, people who criticise a lot are often called critical". Mia elaborated on this idea, saying, "Critical thinkers criticise a lot," which further showed a multiple understanding of CCT. Furthermore, Ika stated:

> A critic still goes through the stage of evaluating something they will criticise, but a complainer raises objections or grievances based on their thoughts or feelings that don't match. They don't go through a process of evaluating the information first. So,a critic might still be using their critical thinking process.

This discussion reflects an issue in the process of understanding CCT terms by the teachers;they have different concepts about what is called being critical. This finding aligns with the findings of Fives and Gill (2015), who suggest that teachers' misconceptions about key termsof CCT can hinder the implementation of broader teaching strategies. Similarly, teachers like Nina and Mia

initially conflated critical thinking with criticism, viewing it as an inherently negative process. This misunderstanding led to a reluctance to promote CCT in the classroom, as they feared it might create a negative atmosphere. This aligns with the observations of Davies and Barnett (2015), who note that educators often struggle to distinguish between constructive critical thinking and simple fault-finding.

Through discussions, the teachers were able to see how CCT skills comprise distinct yet interrelated processes (Norris & Ennis, 1989) that can be applied to various learning challenges. In this context, the teacher's understanding of CCT can influence the pedagogical practices in the classroom. A misconception of CCT understanding could lead to superficial CCT pedagogical practices. The following excerpt is an example of a teacher's conversation discussing the interrelated processes of CCT:

Desi	Wow, it's a great sharing. Does this categorise as CCT? When do youthink she applies her critical thinking? And when she applies creative thinking? Can you differentiate it?
Rani	I think Dewi applied critical thinking when she first observed the child to understand his specific needs. She didn't jump to conclusions or start implementing strategies right away. Instead, she took the time to identify what was really going on and considered what might work best for him. That's a crucial part of critical thinking – analysing the situationbefore taking action.
Mia	Absolutely, and then her creative thinking came into play when she devised a plan to help the child become more independent. Wrappingup used paper for him to grip every 10 minutes was a creative way to strengthen his hand. It's not something you'd find in a textbook; it's aninnovative solution tailored to that child's specific needs.
Nina	I also see creativity in how she involved the child's classmates and coordinated with his parents. It's not just about the exercises at school;she thought about the whole environment – home and school – working together to support the child's development. That shows a lot of creative thinking in problem-solving.
Yuna	And her critical thinking didn't stop there; it continued as she monitoredthe child's progress and adjusted her approach as needed. When she saw that he could eventually open his lunch box on his own, she knew her strategy was working. It's that continuous process of assessing, reflecting, and adapting that demonstrates both critical and creative thinking.

The teachers recognised that Dewi's critical thinking involved a careful assessment of the child's needs before taking action, while her creative thinking was evident in devising an innovative, tailored solution to help the child develop independence. The teachers also noted that these processes often work together, as Dewi's ongoing reflection and adaptation of her strategies demonstrated the continuous interplay between CCT (Bassachs et al., 2020; Iqbal,2017; Moon, 1999). This deeper understanding marked a shift from their initial confusion andprovided practical

insights for applying these cognitive processes in their teaching practices.

The teachers recognised that Dewi's critical thinking involved carefully assessing the child's needs before taking action. In contrast, her creative thinking was evident in devising an innovative, tailored solution to help the child develop independence. While this recognition shows their awareness of the connection between critical thinking and creative thinking, the depth of their reflection still reflects a stage of making sense of these cognitive processes (Moon, 1999). At this stage, teachers are beginning to understand how CCT works in practice but may not yet have fully internalised how to apply or assess these skills more broadly or systematically (Bassachs et al., 2020; Iqbal, 2017; Moon, 1999).

The conversation demonstrates how the teachers are moving beyond initial confusion about CCT. They start to see the interplay between CCT in Dewi's continuous reflection and adaptation of her strategies, an important observation that marks their early understanding of these processes. However, the discussion remains relatively superficial because it focuses on describing the visible outcomes of CCT – such as the creative solution Dewi devised – without delving deeper into how these thinking skills were intentionally developed in the child or how Dewi measured the effectiveness of her approach in fostering CCT in her students(Naeem & Rana, 2023).

As the teachers engaged more in discussions, they transitioned into the *making meaning* stage (Moon, 1999). During this stage, their understanding of CCT deepened as they connected new insights with their prior knowledge. Teachers started to recognise that critical thinking involves a constructive process of analysis, evaluation and problem-solving, rather than merely pointing out flaws (Facione, 2011; Guskey, 2016). This was a significant shift from their initial confusion, reflecting a deeper engagement with the concepts. When the teachers were directly asked to articulate their thoughts on CCT, their responses demonstrated their initial understanding:

> Creative thinking involves generating new ideas, exploring various new information,and critical thinking analyses and evaluates those new ideas and information beforemaking a decision. (Ika)
>
> I want to emphasise that although they are different, both are necessary for solving problems effectively. (Yuna)
>
> I agree that critical and creative thinking are different but closely related to eachother and support each other in our thought process because critical thinking analyses and evaluates new ideas or other alternative solutions generated fromcreative thinking before making decisions in solving problems. (Mia)

Ika distinguishes between the two processes, recognising their complementary roles in decision-making (Baker et al., 2001). Yuna emphasises the necessity of both processes in problem-solving, while Mia highlights the interdependence of CCT, demonstrating a grasp ofhow these cognitive processes interact. Nina, who previously showed her lack of understanding, began to articulate her understanding of critical thinking. Her reflections, "I'mstarting to see the difference. Critical thinking

involves deeper analysis, not just criticising forthe sake of it," along with, "So if I understand correctly, critical thinking is about evaluating and analysing, not just pointing out flaws. It's a skill that goes beyond the classroom". The teachers' awareness was crucial for their professional learning, as it equipped them with theknowledge to design learning activities that explicitly target either critical or creative thinking or both, depending on the needs of their students. (Easton, 2008a, 2008b; O'Brien & Jones, 2014). This is the first step in putting the teachers' understanding into practical implementation.

Many teachers struggle with understanding the CCT concepts, probably due to a lack of clear definitions and robust professional learning resources that adequately address the nuances of CCT (Boeskens et al., 2020). The teachers highlighted a critical need for more comprehensive professional learning programs that focus on deepening teachers' understanding of CCT and providing them with practical strategies for implementation. Initially, many teachers, such as Nina, exhibited a superficial understanding of the distinctionbetween CCT. The teachers were prompted to think deeply about CCT through guided discussions with questions such as *"how do you define creative thinking in your classroom?"*or *"in what ways do you incorporate critical and creative thinking into your lessons?"* (Kuhlthau et al., 2015). Thus, the teachers began to develop a more nuanced understanding of how critical thinking can be distinct yet complementary to creative thinking.

The teachers emphasised that CCT is fundamental in developing students' problem-solving abilities. For instance, Yuna articulated a process-oriented understanding of CCT, describing how students use critical thinking to evaluate potential solutions and creative thinking to devise alternatives when initial strategies fail:

> What I understand [about CCT] is when students encounter a problem and can solve it, their CCT ability is tested. Because there's a thought process when lookingfor a solution, like, what might be the right solution? Then we try solution A, and if that doesn't work, we try solution B.

An example of Yuna's activities shown during classroom practices was when the students discussed how to clean the school facilities. First, they planned to ask for the involvement of their seniors; however, as their school schedule was different, they noticed it was difficult to collaborate with their seniors. They decided to work with their classmates and shared solutions such as sharing tasks. This activity highlighted the students' potential for CCT as they began to analyse and adjust their plans and devise alternative solutions. Afterwards, Yuna guided them to reflect on what worked, what didn't, and how they could improve next time. The nature of problem-solving described by Yuna is essential, but its implementation depends on how well students are guided to reflect on and learn from the activities. This suggests a need for teachers to develop strategies that encourage trial and error and foster critical reflection on the student's learning (Brookfield, 2017; Šarić & Šteh, 2017; Van Schalkwyk et al., 2015). (See Appendix 4 for an example of the teacher's

lesson planning) The teachers also articulated an understanding of the role of CCT in fostering adaptability and resilience in students. Rani highlighted how CCT helps children become more adaptablein various contexts:

> In my opinion, CCT can help children become more adaptable because they learnto engage in different situations. They also look at problems from different perspectives. This means if the situation is different, possible solutions might alsobe different.

Mia showed her agreement with Rani in terms of supporting adaptation to a new environmentor situation. She emphasised the importance of children interacting with everyone and collaborating with different groups rather than only sticking to the same team. Mia's emphasis on collaboration supports the idea that CCT is crucial to social adaptability. Encouraging students to work with others in diverse teams exposes them to different ideas, problem-solving styles, and perspectives (Loes et al., 2018). This helps students become more resilient as they learn to work with others in different groups; students learn to manage relationships, find middle ground and consider different ideas – all essential skills for handling complex or new situations (Kiyota, 2021). Rani and Mia's insights illustrate how CCT enhances problem-solving abilities and helps students develop the emotional and socialskills necessary to adapt to new environments and challenges. These qualities are fundamental in building students' long-term resilience and preparing them to face the unpredictability of real-life situations.

5.3.2 Theme 2: The application of creative and critical thinking in theclassroom

The data indicate that as teachers' understanding of CCT developed, they initiated classroom activities designed to foster CCT among students. The teachers' shift from a theoretical grasp of CCT to practical implementation in the classroom is noteworthy. It reflected an emerging ability among the teachers to translate CCT concepts into actionable strategies (Agusta & Noorhapizah, 2020).

A strategy emerging from the teachers' focus group discussions was the emphasis on engaging students in simple, hands-on activities that could naturally stimulate CCT (Hess, 2022). The teachers collectively recognised that at the primary level, students might struggle with abstract concepts like CCT. Therefore, the teachers preferred to embed CCT within everyday classroom activities rather than providing instruction on these concepts. For example, Yuna suggested that teachers should focus on activities that stimulate thinking rather than trying to explain CCT directly to students:

> In my opinion, we don't need to explain to the students what critical and creative thinking are. Just engage the children in simple activities that naturally stimulate them to think. For example, we can ask them to evaluate a story we read together.Ask their opinion, what they like and dislike, and why.

Yuna's approach reflects a practical understanding of the developmental stages of young learners,

who may not yet be able to grasp complex cognitive concepts like CCT. However, while this strategy effectively leverages age-appropriate activities to encourage critical thinking, there is a tendency to focus on surface-level engagement, such as expressing likesand dislikes, without necessarily guiding them towards deeper critical analysis (Salmon & Barrera, 2021). This suggests combining simple activities with more opportunities for reflection and analysis, such as focusing on asking *why*?

The teachers' discussion also considered using collaborative activities such as brainstorming and group storytelling to foster CCT. Yuna proposed a brainstorming session to help students generate ideas for a class project (Byron, 2012; Dalton, 2018), while Nina emphasised the importance of process rather than just the final product. However, these collaborative activities also present challenges. Some teachers observed that group dynamics could significantly influence the outcomes of these sessions. For instance, Nina noted that more vocal students often dominated group discussions (Soranno, 2010), which sometimes led to quieter students' ideas being overlooked:

> In my experience, when we brainstorm in groups, some of the more vocal studentsoften take over the discussion. This means that quieter students don't always get achance to share their ideas, and we might miss out on some creative solutions.

However, the teacher will personally approach quieter students to motivate them to speak up. In summary, while the teachers demonstrated an evolving understanding of how to apply CCT in their classrooms, their approaches also reveal areas for further development. The integration of CCT in classroom activities shows promise but requires ongoing reflection on group work, for example, how to be an effective member of the group.

5.3.3 Theme 3: Spontaneous teachable moments

In one event, Euis realised that a spontaneous discussion could lead to a teachable moment of learning. She organised a mathematics learning session for basic counting using natural objects when, suddenly, her students increased their curiosity. An unexpected activity shifted basic counting into a student-driven experiment when students expressed curiosity about which objects would burn longer. This was shown in Euis's sharing of her experiences in the focus group discussion:

> Euis: What's more interesting is that students learned math about basic countingusing natural objects they brought from their home and the schoolyard. They initiated an experiment on which items they brought would burn longer, and they compared that. This unplanned activity emerged from the students' curiosity, so Itried to facilitate it.
>
> Mia How to burn the materials?
>
> Euis Well, there were some students who brought matches to use as media to count.

> Mia So, the students took what was supposed to be a simple counting lessonand turned it into an experiment. How did you manage the situation? Were you concerned about the safety of using matches in the classroom?
>
> Euis Yes, I was definitely concerned at first. But instead of shutting it down, I decided to guide them safely through the process. We went outside to conduct the experiment in a safe area, and I stayed with them to make sure they were being careful.

During the conversation, Euis realised that CCT could be facilitated through student curiosity and spontaneous learning moments. What began as a basic counting lesson quickly evolved into a hands-on, student-driven experiment that developed CCT. The student's curiosity about which natural objects would burn longer led them to make predictions, observe outcomes and compare results. Euis noted that this unexpected shift allowed the students to engage in their thinking process as they analysed which objects burned longer and why through experiments with different materials and methods to explore the concept further. Thisshows the implementation of CCT by involving analysis, stimulating ideas and encouraging active participation. Some scholars, such as Paul and Elder (2019) and Sternberg et al. (2019), emphasise that to be successful, CCT needs to be carefully planned. However, this spontaneous discussion suggests that there is flexibility in implementing CCT in a way that the teachers acknowledge unexpected situations as teachable moments that could lead to CCT learning (Foster, 2014). Still, teachers need to undertake TPL and practice their CCT skills themselves.

In the case of Yuna, after the cleaning project she noticed to talk about maintaining responsibilities to take care of the class and school environment during the class discussion. A student who went to the toilet came back to the class and brought a kitten:

> CCT skills even occur in everyday life without children realising it ... like when suddenly a student brought a kitten to class hidden in her skirt … Students immediately asked questions showing their concern for the kitten: 'Is this kitten lost?' 'Where's its mother?' 'How can we help this kitten find its mother?' Because of this … our lesson shifted to discussing how to care for animals and take responsibility for pet ownership. I also encouraged the students to think about the possibilities – whether the kitten was abandoned or just wandering around. The students then discussed what should be done. Some wanted to give it water, somewanted to make a place for the kitten to lie down, and others wanted to report it to another teacher. One even suggested putting up a sign to make sure no one stepson the kitten since it was so small. Of course, everyone was eager to keep the kitten.

Yuna's experience further illustrates how learning can unfold through everyday occurrences that unexpectedly become teachable moments. In this instance, when a student brought a kitten to class, it presented an unplanned opportunity to explore topics such as responsibility and animal care. Children's curiosity and care make them think and ask questions. Yuna also encouraged the students to think of possibilities. Yuna used the opportunity to care for the animals to maintain environmental stewardship and responsibility within the classroom community. She emphasised

how this simple act of compassion towards the kitten could extend into broader discussions about how students can take responsibility for their surroundings, not only for animals but also for their local environment. This aligns with CPoP principles, fostering awareness of place and responsibility through everyday experiences. By guiding students in these moments, Yuna supported CCT as the students learned to inquire,explore possibilities, and consider the ethical dimensions of caring for their environment.

Such spontaneous, real-life occurrences became a platform for deeper learning aboutcommunity and empathy.

The spontaneous nature of these incidents highlights the flexible aspect of learning that is not confined to structured activities or planned curriculum paths (Nohl, 2009). Rani and Yuna demonstrated that CCT does not always require elaborate set-ups; instead, it can be triggered by engaging with the natural curiosities and experiences that arise spontaneously in the educational setting (Haug, 2014). Spontaneous teachable moments are instances when the teacher must choose to either follow the pace of the curriculum or adapt to the student's needs. It might be challenging for the teacher to improvise, but it also gives an opportunity for teachers to deepen their learning (Foster, 2014). In this case, Yuna and Rani acknowledged the opportunity and adapted it to meet the students' needs (Mason, 2015). Teachers can cultivate and leverage spontaneous learning moments by fostering a flexible classroom environment that encourages curiosity and allows for deviations from planned lessons when unexpected topics arise. (Foster, 2014; Haug, 2014) By promoting student-ledexploration, teachers can give students the freedom to bring in personal experiences or questions that spark spontaneous discussions (Day & Hampton, 2020). However, it needs tobe considered how far young students are cognitively ready for this freedom in making complex decisions, especially for those with lower primary grades. Integrating these moments into learning activities further deepens spontaneous learning, guiding students to reflect on what they have learned and reinforcing spontaneous inquiry. Additionally, teachers can create opportunities from the impromptu mode of open-ended questions and prompts that allow varied responses to emerge, thereby enriching the learning process.

5.4 Conclusion

From the findings and discussions above, I conclude that the teachers' intentions to implement CPoP were to equip their students with environmental awareness, help them build social awareness, engage their students in CCT with real-life experiences, and encourage them to collaborate with communities and connect with cultural and local wisdom. I needed to critically reflect on whether the teacher's intentions were successfully achieved through their classroom practices.

The teacher's understanding of CCT can be seen through their use of key terminologies, my

observations of their application of CCT in the classroom and spontaneous teachable moments in learning. The teachers' understanding of these key concepts is the foundationfor designing and implementing a learning sequence through CPoP.

CHAPTER 6: STUDY 2: IMPLEMENTATION OF CRITICAL AND CREATIVE THINKING AND CRITICAL PEDAGOGY OF PLACE

6.1 Introduction

This chapter presents findings from Study 2 of the research, which focused on understanding the participating teachers' teaching practices and reflections on how they adapted their CPoP so that it integrated with CCT. Data were obtained from 12 teachers from different regions of the BMA as they applied CPoP principles in their teaching practices. In this chapter, I present and explore findings from the analysis, which provides insights into how these teachers applied CPoP in their classrooms and what they learned from the implementation process.

The data collected for this study are derived from a combination of researcher and teacher classroom observations, focus group discussions and field notes. The observations provided insights into classroom practices, while the focus group discussions allowed for a deeper exploration of teachers' perspectives and experiences when addressing challenges such as resource limitations and adapting CPoP. My field notes served as an additional layer of documentation, capturing details and reflections that emerged during the research process, particularly regarding the specific learning adjustments teachers made and their responses tousing place-based approaches to enhance student engagement and CCT (Chapter 4 provided a detailed explanation of the methodology).

The process of collecting and examining the data contributes to answering the followingresearch questions:

RQ3: How do teachers understand CPoP as part of classroom teaching practices through TPL?

RQ4: What are the enablers and inhibitors of implementing CPoP in fostering students'CCT?

RQ5: What are the teachers' observations about students' responses to CPoP implementation?

The chapter is organised around these research questions, combining the findings and discussion for each question to provide a comprehensive understanding of the results. Each section delves into the themes that emerged from the data, highlighting both the practical challenges and the successes teachers experienced as they implemented CPoP to foster CCT.

The teachers' classroom practices are organised into key themes that were developed from the data. Themes that emerged include addressing real-life issues such as environmental sustainability, local community challenges and cultural heritage, connecting students to their immediate surroundings and local environment, and emphasising local wisdom. Each themeis elaborated to provide clear and practical insights into the way teachers adapted their lessons to

implement CPoP principles, the challenges they faced, and the observed impact on students' engagement and learning outcomes. All the names are pseudonyms to protect the anonymity of the participants and maintain ethical standards.

6.2 Teachers' understanding of critical pedagogy of place as partof classroom practices

This section presents the findings about how teachers understood and integrated CPoP into their classroom practices to foster CCT. The data collected reveal the different ways teachers interpreted and applied CPoP principles in their lessons. The findings highlight both the teachers' conceptual understanding of CPoP and how this understanding shaped their pedagogical practices.

6.2.1 Addressing real-life issues

By embedding real-life problems into lessons, teachers created learning experiences that resonated with students' everyday lives, thus fostering deeper engagement and understanding of CCT and CPoP (Gackowski, 2003; Petrucco, 2019). For young learners, connecting lessons to familiar, real-life issues helped make abstract concepts more relatable and understandable. Dewi shared an example of this during the focus group discussion: *"*When we discussed local environmental problems, one of the students asked, 'How can we keep the streets cleaner near our school?' This showed me that they were thinking about how to help their own community, even at this young age*."* This highlights howCPoP can encourage even Grade 1 students to engage critically with real-life issues in ways that are meaningful to them. Rani mentioned, *"*We talked about littering, and one student suggested we make signs to remind people not to throw trash in the schoolyard. It was a small idea, but it showed how they were already thinking creatively about solutions*."* This example reflects how CPoP not only fosters critical thinking but also empowers students to propose actionable solutions to the issues they observe in their environment. The CPoP approach encourages students to think critically and creatively about the problems affecting their communities, which is similar to the findings from Dolan (2020), Gill (2012), and Utomo et al. (2020).

By way of example, Yuna and Dewi addressed real-life issues through their lessons on cleaning projects. This project addressed the cleanliness of the school environment, and they aimed to make students more aware of their responsibility towards their surroundings. Yuna and Dewi's project align with CPoP's principle of reinhabitation, which emphasises the importance of fostering a sense of responsibility and care for the local environment (Q. M. Cutts, 2012; Gruenewald, 2003a). By engaging students in practical activities such as the regeneration of the local ecosystem that would directly impact their community, the project helped Yuna and Dewi connect

learning to real-life actions, promoting a deeper understanding of their role within their local context.

Yuna guided her students by asking questions in observing their classroom and other areas at school to identify problems such as cleanliness. She guided a class discussion where the students planned to clean the classroom and school, as shown in the following excerpt:

Teacher	Today we will look at the condition of our classroom and school environment. I have a picture here. Take a look at this picture. Whatdo you see?
Putri	That's a clean classroom, Ma'am.
Galih	The desks are neat.
Nara	There are decorations on the wall.
Teacher	Wow, you noticed a lot. How about the others? What else do you see?
Rayzan	Ma'am, can our classroom be like that?
Teacher	Like what, Rayzan?
Rayzan	Yes, clean like in that picture.
Teacher	Why does it need to be cleaned?
Rayzan	I like it. The classroom is good.
Teacher	What's different in this picture?
Rayzan	It's shiny, the desks are nice, and there are decorations.
Teacher	Clean, ya? How about our classroom?
Students	It's dirty.
Teacher	Why is it dirty?
Putri	It's not cleaned.
Galih	It's not swept.
Nara	There's trash.
Teacher	Why didn't you clean it?
Galih	No broom
Teacher	Now, who wants our classroom to be as clean as that one (pointing tothe picture)?
Student	I do, Ma'am!
Teacher	How can we make our classroom as clean as that one?
Dani	Clean it, Ma'am.
Teacher	Who will clean it?
Dani	The janitor who sweeps.
Teacher	But we don't have a janitor who sweeps every day. How about it?
Nara	Do it ourselves, Ma'am. We'll clean it.
Teacher	Does everyone agree?
Students	Yes!
Teacher	Great! Now let's discuss about it. How do we clean our classroom?

The excerpt from Yuna's classroom illustrates an essential aspect of CPoP—encouraging students to observe their immediate surroundings, identify problems and take responsibility for addressing them. Yuna's learning goal was for the students to keep the school environment clean and to sustain the cleanliness and understand why this is important and why they should take responsibility. By guiding her Grade 1 students through identifying cleanliness issues in their

classroom and school, Yuna is helping them connect their learningto real-life contexts. This is a practical application of PBE, where students engage directly with their daily physical environment, making education relevant and tangible.

Given that these are Grade 1 students, this activity represents an essential starting point in developing their awareness of the world around them and fostering CCT. At this stage, problem identification, such as noticing trash or a lack of water in the bathroom, is an introduction to environmental responsibility (Stevenson, 2008). For young children, being involved in practical activities, like cleaning up their school environment, helps them grasp the concept of reinhabitation, which involves learning to live well socially and ecologically inplaces that have been disrupted and injured, and decolonization, which involves learning torecognise disruption and injury and to address their cause where they learn to care for and maintain their surroundings (Gruenewald, 2003a; Kelley & Pelech, 2019; Manahan, 2006; Willms, 2001).

These are initial experiences which could be deepened to include more complex discussions and critical thinking (Q. M. Cutts, 2012). At this stage, the activity is a foundation for more reflection and action as they progress through their learning. In future lessons, as the students' understanding grows, Yuna could scaffold the learning to encourage students to think about the reasons behind these problems or the possible consequences of their actionsthrough discussions or open-ended questions (O'Reilly et al., 2022). For example, introducing discussions on how habits like littering or neglecting shared spaces lead to environmental disadvantage and how they can influence change through small actions.Yuna's project supports the long-term goal of fostering students' CCT at an early age.

Encouraging student agency from an early age, as Yuna is doing, is vital to foster CCT. In this lesson, Yuna guided the conversation, giving students opportunities to suggest solutions and take ownership of tasks, fostering active student engagement (Zimmerman & Weible, 2017). As the students progress in their learning, they could take more active leadership roles in organising initiatives or developing solutions for issues within their school and with the local community, further aligning with CPoP principles. For example, the students initiated a proposal to improve their school facilities (unused classroom), particularly involvinglocal tradesmen such as electricians and builders.

Another teacher, Rani, connected real-life issues to her teaching by facilitating a recycling project that emerged from her students' concerns about the lack of rubbish bins at their school. With guidance from Rani, the students decided to create bins from used plastic bottles, addressing the immediate need for rubbish bins and raising awareness about reusing materials and reducing waste. The project became an opportunity for students to engage in CCT as they brainstormed ways to design and construct the bins using materials that were readily available in their

environment. Rani also encouraged her students to think about their surroundings and collaboratively develop practical solutions. For example, Rani generated students' ideas by asking them to discuss first what they could make with plastic bottles before finalising the project. This sequence of the discussion between Rani and her class illustrates how collaborative problem-solving and critical thinking are fostered through student-driven exploration of real-life issues:

Teacher	Let us discuss what we can make from a plastic bottle.
Mira	Umm, we could make a flowerpot! We could put a small plant in it!Hana
Hana	What about a pencil holder? We can keep it at school.
Dika	Miss, how about making a bird feeder? Like the one I have at home for birds.
Fasya	A toy car! So we can race it!
Rico	A rocket! It can fly up! Whooooosh…
Luki	How about a garbage bin? Like the one my brother made.
Yusuf	But a bottle cannot be a bin?
Luki	Not one bottle, but many bottles and we make a big bin.
Mira	We could use it for rubbish in the classroom, then we won't have to share with 4th grade.
Mira	Why a garbage bin? A flower pot would be prettier, and we could paint it
Yusuf	Well, we need a place to throw away trash.Fasya
Fasya	What about a toy car?
Yusuf	Ya, but then where will we put the rubbish?
Zaki	Just buy a nice garbage bin.
Yusuf	Do you have the money for that?
Hana	What do you think, Miss?
Fasya	Yeah, I think I need a garbage bin too, so we can put our rubbish. I can't even throw this away (pointing to an empty snack wrapper).
Rico	If we make a garbage bin, can we decorate it?
Teacher	Wow, you all have so many ideas. Let's think about which one is the most usefull?
Mira	Mine is!
Fasya	Can you throw trash in it?

In the above exchange, the students are involved in a discussion and come to different opinions and ideas. They are encouraged to decide on one project. In my field notes, I questioned Rani about her decision to steer the students to select just one project rather thanexplore all their ideas. She explained that with limited materials, it was essential to help students practice making decisions and identifying the best solution. Rani's decision to focus on one project rather than exploring all the students' ideas may limit opportunities for creativity. However, this decision can also be viewed through a different lens. I interpreted Rani's approach as an effort to teach students not just to generate creative ideas but also to evaluate those ideas and choose the most feasible solution as an important element of CCT (hooks, 2010; Vandeyar, 2017). Rani's approach in this example also mirrors the principles of CPoP, as students were encouraged to engage with and find solutions for real-life problems within their community (Carvalho et al., 2015; Laware &

Walters, 2004; Maker et al., 2015).

Mia, a teacher from the east of BMA, noticed a recurring issue; her students frequently mocked each other, often using parents' names or hurtful words. Concerned about their lack of social awareness and empathy, she addressed the issue using storytelling. In an interview, she shared, *"*The children often tease each other and don't respect their peers. I want to improve their social awareness and help them empathise with their friends." Mia selected a story *Jeje si Jerapah*, a fable about kindness and empathy. Before reading, Mia asked the students to write down exploratory questions, engaging them with the story.

Demonstrated in the following example, as they discussed the characters' actions and the consequences of those actions, the class explored themes of empathy and kindness:

Teacher	Why didn't Jeje help the grandfather?
Kiara	Because Jeje thought it was too much trouble.
Teache	Why is that not okay?
Devan	Because we should help people who need it.
Teacher	What should Jeje have done instead?
Adinda	Jeje should have helped the grandfather.
Teacher	Why should we help others?
Kiara	Because we should be kind to everyone.

This dialogue illustrates how Mia guided her students to reflect on Jeje's behaviour and they are encouraged to develop empathy by understanding the importance of helping others. Through this process, Mia promoted CCT by encouraging students to notice character motivations and reflect on moral values that influence their social lives (Q. M. Cutts, 2012).

Mia's choice of *Jeje si Jerapah* introduced the Sundanese values of *silih asah, silih asih, silihasuh* (mutual learning, care and support), helping students connect cultural principles with the story's moral lessons (Harris & Manatakis, 2013). One student shared how they helped their mother at home, applying these values in real life, "I help my mom by keeping an eye on my little sister and taking care of her when my mom is cooking or washing our clothes". Later, Mia further engaged students in reflecting on their behaviours:

Teacher	Is it okay to mock each other? Why?
Adinda	Nooo, ma'am, because someone might get hurt.
Teacher	Do you still mock each other? Why do you think that happens?
Devan	Well, Iwan and Radit often mock each other. Because they think it's funny.
Teacher	But does it feel funny to the person being mocked? Why?
Radit	No, it hurts their feelings.
Teacher	So how should we treat each other? Why is it important to be kind?
Kiara	We should be kind so we can have friends and make people happy.

This conversation shows Mia's effort to guide students towards self-awareness and kindness in

their interactions, reinforcing the values discussed in the story (Häggström & Schmidt, 2020a). While Mia's storytelling and class discussions prompted immediate reflection (Challinor et al., 2017), maintaining these values long-term may require embedding them into daily routines, ensuring that empathy and kindness become ongoing practices in theclassroom (Husain, 2021; Mariadhas, 2019).

In concluding this section, teachers like Yuna, Dewi, Rani and Mia demonstrate the transformative potential of CPoP in addressing real-life issues within the classroom (Gleasonet al., 2008; Maker et al., 2015). Their experiences highlight a shared commitment to making learning more meaningful and relevant despite the challenges and variations in their approaches (Vandeyar, 2017). This discussion provides a foundation for a deeper analysis of how these experiences align with the broader goals of my study and the theoretical frameworks underpinning CPoP and CCT.

6.2.2 Connecting students to their immediate environment and local context

Connecting students to their immediate environment fosters meaningful and relevant learning experiences (Sheppard et al., 2019). These connections with their immediate environment align with the principles of CPoP, which emphasises the importance of making learning more accessible and engaging for students by integrating aspects of their surroundings, everyday lives and cultural practices into the curriculum. When teachers create learning experiences that resonate with students personally, teachers enhance their students' understanding and engagement (Greenwood, 2008; Martin, 2010; Martusewicz et al., 2011).

Some teachers implemented learning projects that connected their students to their immediate environment. For instance, Pina's project focused on family bonds to connect students to their community. In a community where family plays a central role in daily life, Pina chose this theme to resonate with her students' experiences and to align with the 2013 curriculum at the beginning of the school year. She believed that starting with something familiar and deeply personal would allow her students to engage more readily with the learning process (Dong et al., 2020). In the focus group discussion, she shared:

> The learning goal for the theme 'My Family' is to explore family members and their activities. I chose this theme at the beginning of the semester because it is closely related to the student's lives and experiences. I wanted the students to be engagedby asking and answering many questions about their families. Additionally, the students were just beginning face-to-face interaction after COVID-19, so I introduced the theme gradually. One of the learning activities involved students sharing stories about their families. Each student brought a family photo to show totheir classmates, followed by a question-and-answer session.

The project Pina initiated aligns with the principles of CPoP as it relates to the students' localand personal experiences. By choosing My Family as the theme, Pina connected students' learning to

their everyday lives and fostered a sense of belonging and relevance in the classroom. The students were encouraged to reflect on their own experiences and shared them with others. By bringing in family photos and sharing stories, students actively participated in the learning process, which helped develop their communication skills and critical reflection, essential aspects of CCT (Bowers, 2002; Gruenewald, 2003b). The question-and-answer activity promotes thinking by allowing students to inquire and learn from each other (Alaimi et al., 2020). Pina's project demonstrates how CPoP can be implemented in a primary school setting through the use of local, culturally relevant themesto foster student engagement and thinking. It emphasises the importance of connecting learning to students' lived experiences, especially in post-pandemic contexts where rebuilding social connections is crucial.

An example of my fieldnotes shows a classroom activity where the students showed curiosity about their friends' photos and asked questions. For instance, a student shared about his family:

Tasya	This is my family photo. My father's name is Asep Saepudin, my mother's name is Rohayati. This is my older sister, Tiara.
Teacher	Alright, does anyone want to ask Tasya a question?
Budi	Where are you?
Tasya	We are eating meatballs at a meatball stall. Everyone [in his family] likes eating meatballs.
Budi	Why do you like meatballs?
Tasya	Because it's delicious.
Vira	I like meatballs too.

Through this dialogue, students recounted simple details and were prompted to ask useful questions. Pina's method helped as a beginning activity to engage with the material on a more thoughtful level (Jensen et al., 2011; Vickery, 2016). She could have extended the discussion more deeply by asking questions such as *what are the meatballs made of? are they healthy? why is it delicious? do you cook meatballs at home or do you just buy that?*. This discussion led to questions about what parents do for work and whether or not they stay at home.

In my field notes, I recorded an interesting event when a student named Haris shared that his father worked at a bank and his mother was a housewife who took care of all the household chores. Haris's friend, Aris, asked, "Why didn't your mom go to work?" Haris replied, "Because a man should work, and mom should stay home." Then Aris asked, "So, your momwasn't allowed to work, right?" and Haris answered, "I don't know". This interaction highlightstwo critical points: First, Aris's questioning shows how students compare their family situations with that of others, leading to a better understanding of different perspectives.

Second, Haris's response reveals how some students might accept traditional gender roles in their families without question or what the community instils about gender roles or the position of women as homemakers and men as breadwinners, reflecting the values they have learned at home.

While Pina's approach got students to think about their personal experiences, it also brought up essential challenges for teachers. When students share their beliefs – especially those tied to cultural traditions – teachers must help them think critically about these ideas by encouraging the students to ask critical and reflective questions and respect traditional cultural beliefs. The conversation between Haris and Aris shows that while students are encouraged to explore their identities (Jensen et al., 2011), it is also important for teachers toguide them in ethical questioning and building empathy, reflecting the beliefs they've grown up with (Golden, 2016). Teachers must balance respecting students' backgrounds with encouraging them to think more deeply about why they believe what they do and how it affects others (Cicchino et al., 2022). This example shows how when teachers facilitate classroom discussions, students tend to engage in CCT about their beliefs and how they might differ from others (Bourn, 2008; Cicchino et al., 2022; Gruenewald & Smith, 2014).

Other teachers connected the implementation of CPoP by using natural resources. For example, Euis implemented hands-on learning in her classroom to allow students to interact with objects to understand abstract mathematical concepts. Students moved beyond memorisation to a more experiential and meaningful engagement with mathematics by grouping and counting tangible natural objects such as rocks, oranges and flowers.

Additionally, she promoted collaborative learning by encouraging students to work in groups, enabling them to combine their resources. Further, the students applied the counting concept through what the teacher considered to be creative expression, such as drawing natural objects. She told the students, "Who can draw seven objects? Ok, Ilham, what do you want to draw that represents seven objects? Fruit? Animals? It's up to you."

That activity demonstrates Euis's lack of understanding of what creative expression actually is. She encouraged drawing and counting objects. Creative expression, on the other hand, allows the students to have time and freedom to explore new ways of thinking and expressing ideas, not just replicating exercises (Eisner, 2002). Research shows that many well-known artists have looked to the art of young children for inspiration because children freely express their emotions and ideas without adult interference (Roy et al., 2019). In addition, creative expression is a way of communicating ideas and feelings for those students who are not able to clearly articulate through their writing or speech (Isbell & Raines, 2013; Quillin & Thomas, 2015).

During mathematics learning, an unexpected activity as a teachable moment occurred, as described in Chapter 5. The learning outcome for the activity was collecting and counting objects. Because of the proximity of the school to the children's homes, they were able to collect a variety of interesting objects to share and compare with each other. They used the object to learn basic counting, which is one of the first numeracy skills for children's learning.Teaching children to count

in the early years is important for preparing them for success in mathematics when they start school (Visser et al., 2019). It lays the foundation that makes mathematical learning possible. As they demonstrated and shared their counting skills with their chosen objects, the students were curious about which objects would burn longer. Euis decided to use the opportunity to facilitate scientific learning (Foster, 2014; Mason, 2015).

She described this spontaneous learning moment during the focus group discussion:

> What's more interesting is that students learned math and initiated an experimenton which items they brought would burn longer. They compared that. This unplanned activity emerged from the students' curiosity, so I tried to facilitate it.

She further explained that she encouraged the students to hypothesise, experiment and draw conclusions, as seen in the excerpt below during the classroom practice:

Bu Eulis	Earlier, someone asked, "Which object will burn longer if we light it?" What do you all think? Let's make some guesses first.
Dani	The matchstick will last the longest, Bu.
Aldi	The chocolate stone will burn longer because it's from Saudi Arabia!
Bu Eulis	Interesting guesses! Let's try an experiment to find out, but remember, we need to be very careful with fire. We'll do this together.
Faris	(Excited) Yay! Let's see what happens!
Bu Eulis	Alright, let's start with the matchstick. We'll light one and see how long it lasts. (Lights the matchstick). Now, let's do the same with a small stick and see which lasts longer. Who brings the small stick? Can I have one? Student nods.
Bu Eulis	We'll do this on the floor. Let me find some plywood first. Let's begin.
Faris	(Watching intently) Begin by lighting the fire.
Hana	The matchstick burned out quickly, Bu! The small stick is still burning.
Bu Eulis	That's right! So, what's the conclusion?
Lintang	The matchstick burns faster than the small stick!
Aldi	Because the matchstick is small.

Euis's approach to incorporating natural resources into mathematics lessons aligned well with the principles of CPoP. By using objects that students brought from home or collected from the school grounds, Euis contextualised learning within the student's immediate environment. This method made the abstract concepts of counting more real and reinforced the idea that mathematics is connected to their life. The use of familiar objects helped to connect mathematical learning to everyday experiences. Euis's practice of encouraging students to bring items from their surrounding environment to the classroom also reflectedrespect for and engagement with the students' lived experiences, a central idea of CPoP (Gruenewald, 2003b; Gruenewald, 2008; Kelley & Pelech, 2019).

Euis's practice of facilitating a student-driven mathematics experiment aligned with the CPoP principle of fostering active engagement and student-centred learning. By encouraging students to hypothesise, experiment and draw conclusions, Euis shifted the focus from traditional, teacher-led instruction to a more inquiry-based approach that actively involved students in the learning process when she could use a teachable moment of learning (Haug,2014).

She seized on the opportunity to encourage students' exploration of combustible materials. Euis promoted CCT by going on to facilitate student-led inquiry into how well their collected materials burned. This demonstrated how learning can be rooted in students' curiosity and interaction with their environment (Carvalho et al., 2015). While the experiment fostered CCTand curiosity, it also required careful supervision due to the potential safety risks. Euis acknowledged this need for caution:

> Especially playing with matches needs supervision. So, there was learning they did, making guesses first on which would last longer, trying experiments, comparing, and drawing conclusions themselves.

In contrast, Lela had a similar project to Euis, where the students were sent out to collect natural materials. All they learned was basic counting through rote learning using found materials, which may as well have been classroom counting blocks. This activity did not encourage the students' CCT, merely their memory.

Another teacher, Nina, implemented CPoP in her classroom by guiding her students through a project on creating natural dyes. This project aimed to foster creativity and connect students to their cultural heritage and local environmental resources (Gruenewald & Smith, 2014). By engaging her students in hands-on learning, Nina encouraged them to explore traditional practices using natural materials, deepening their understanding of local culture and ecological stewardship (Garavito-Bermúdez & Lundholm, 2017; Häggström & Schmidt, 2020a).

Nina learned about traditional materials and methods during her teacher preparation at the university. She connected her experience to the concept of CPoP and explored the available natural materials in her surroundings. She began the project by introducing traditional local stories about making natural dyes, followed by a classroom discussion that engaged the students in thinking about natural resources. She asked, "If we didn't have coloured pencils or markers, could we still colour a picture? Why do you think so?" This question prompted the students to think creatively about alternative art creation methods. Nina asked the students to bring out specific fruits, leaves or herbs from home that could produce natural dyes. These included turmeric, dragon fruit, Suji leaves and *jamblang* (Java plum). In the classroom, Nina began by discussing with the students how different natural materials could be used to create colours. She asked, "Can you colour a picture using natural materials? Forexample, plants or fruits or anything else?" One student excitedly shared, "We can use henna for our nails," while another added, "We can use

leaves to make green colours".

The students then engaged in hands-on experiments that blended these natural materials to extract dyes. Nina guided them through the process, encouraging them to mix different ingredients to see what colours they could produce. She asked them to document their created colours and consider the other effects of combining various natural sources. As the students experimented, Nina asked them, "Now try experimenting with them. What colour do you get?" The students eagerly participated, and one student remarked, "It was more fun, Ma'am because we could make our colours."

Making learning more fun tends to increase student engagement and motivation (Laurian Fitzgerald & Fitzgerald, 2020; Purinton & Burke, 2019). By using multimodal approaches such as hands-on activities, actively working with materials and creative tasks like drawing, students engage more deeply with the content than through traditional teacher-led instructionor textbook-based learning alone (Liu, 2024). In this case, mixing natural dyes, documenting their discoveries and applying the dyes to their drawings provided students with opportunities to explore scientific concepts while engaging their creativity. This integration of multiple modes of learning, such as physical interaction with materials and collaborative sharing, enhances cognitive engagement and supports diverse learning styles (Bezemer & Kress, 2016). Additionally, singing, movement, or visual arts offers children opportunities to demonstrate their understanding in meaningful and memorable ways. The multimodal activity supported the learning of chemical processes and fostered social skills through collaboration when students shared their resources (Cloonan, 2016).

The hands-on activity concluded with students using the natural dyes to colour their drawings. Nina guided them to share their resources, reinforcing the importance of collaboration: "If someone doesn't have a colour, what should you do?" The students responded, "Share with them, Ma'am." The activity also promoted scientific learning specifically to do with the natural chemical elements used to create natural dyes, which could spark a child's early interest in chemistry.

Nina's project serves as an example of how CPoP can connect students with their local environment and cultural heritage while fostering CCT. She provided a connection between the student's learning and their everyday lives by engaging students in creating natural dyes from materials they brought from home. "In your containers, you can mix one material with another. Mix the colours. Can you do that?" The students eagerly participated in the activity,with one expressing, "It was more fun Ma'am because we could make our colours." This approach of having students bring natural materials from home and school to create dyes aligns with the CPoP principle of contextualising learning within the local environment, making learning more relevant and meaningful (Činčera et al., 2020).

The project encouraged students to think as they experimented with different natural materials,

such as fruit, plants and herbs, to produce various colours. This hands-on experience allowed students to explore possibilities inherent in their local resources, promoting innovation and problem-solving skills (Hess, 2022; Yannier et al., 2021). They also learned that they do not have to rely upon manufactured chemical materials that could possibly pollute the environment. From the teacher's resource point of view, this is also moreeffective as there is no need to purchase materials (Smith & Loughran, 2017). The activity also helped students better understand their community's traditional knowledge and practices, fostering a sense of cultural connection (Hodson, 2011; Preston & Symes, 1997). However, while the project fosters creativity and connects students to their cultural heritage, there may be opportunities to further enhance its impact by integrating more discussions on sustainability. Given that these are young learners, discussions could be simplified to focus on the importance of taking care of the environment and using natural resources wisely (Sudaryat & Nurhadi, 2023). Additionally, introducing concepts of how natural dyes can be safer and more environmentally friendly than synthetic dyes or other manufactured art materials could broaden their understanding of sustainability, even at an introductory level (Häggström & Schmidt, 2020a).

Nina's implementation of CPoP through the natural dyes project demonstrates how local resources and cultural practices can foster creativity and deepen students' connection to their environment and traditional art materials and methods. By integrating traditional knowledge to foster CCT, Nina enhanced her students' creative skills and instilled a sense ofcultural pride and environmental awareness. This project is a valuable example of how CPoP can be implemented to encourage creativity while preserving and respecting cultural traditions.

6.2.3 Emphasising local wisdom through critical pedagogy of place

Incorporating local wisdom into the curriculum is a fundamental aspect of CPoP, particularly in fostering a connection between students and their cultural heritage. By drawing on the local community's traditions, values and practices, teachers can create a learning environment that is meaningful and relevant to students' lives (Greenwood, 2012;Gruenewald, 2003a; Martusewicz et al., 2011).

For example, Susi employs *kearifan lokal* (local wisdom) in her classroom by incorporating traditional foods into her lessons. This approach aligns with CPoP, which emphasises connecting learning with students' cultural and environmental contexts (Gruenewald, 2008). Susi began by researching cooking experts in her surroundings and found a local chef who specialised in cooking traditional foods. The chef was also a teacher who was eager to pass on her knowledge of cooking traditional foods. They developed a whole school program to critically reflect on the social and environmental impact of fast food culture. They made critical comparisons to traditional foods and developed possible projects to enlighten other children in order to promote future action. Through

this project, Susi aimed to preserve and promote cultural heritage and at the same time to foster CCT to promote future action among her students.

During my observation, Susi engaged her students in a discussion about traditional and modern foods, asking them to classify foods they were familiar with. The dialogue began withher questioning the students about traditional foods:

Dava	Banana.
Teacher	Banana, where does it belong?
Dava	Traditional.
Teacher	Traditional, why?
Dava	Because it can be used in many dishes.
Teacher	You've been chatting a lot. Dava mentioned banana, traditional and modern foods, what else?
Sasa	Pizza.
Teacher	Pizza, what kind of food is that?
Tasya	Modern.
Teacher	Listen up, this friend says pizza, which falls under modern food. Why is it considered modern?
Tasya	Because it's delicious.
Teacher	Because it's delicious. Any more?

At this point, Susi shifted the focus of the discussion to why certain groups favoured modern foods over traditional ones. She was curious to explore the reasons behind the students' preferences, encouraging them to reflect on their choices and tastes:

Teacher	Why didn't this group choose many traditional foods?
Amir	We prefer modern foods.
Teacher	Why didn't this group choose traditional foods?
Tiara	Don't like the taste.
Teacher	Group 5, why didn't you choose traditional foods?
Asep	Don't like.
Teacher	Don't like, what else? But have you tried them all?
Students	Yes.

The dialogue demonstrates how Susi used culturally relevant content to help students connect their learning to everyday experiences, thereby integrating local knowledge into the classroom. On another occasion, the chef demonstrated the cooking of a traditional snack using *ubi Cilembu* (sweet potatoes that are only found in the local district). She worked with the children in small groups to make the snacks. She initiated the lesson by asking the students, "Why do you think we chose *ubi Cilembu* for today's activity?" This question prompted students to engage in thinking by encouraging them to reflect on the choice of the food item.

Susi's approach to integrating local culture into her teaching by using traditional foods like *ubi Cilembu* as a central element of her lessons connects her teaching to the student's everyday experiences. Her question, "Why do you think we chose *ubi Cilembu* for today's activity?" is challenging for Grade 1 students. It encourages them to think and reflect on the relevance of *ubi*

Cilembu. Responses such as “Because it’s sweet” and “Because this sweet potato can be eaten” show that students are beginning to engage with the idea of local foods, even if their reflections remain at a basic level as they are just starting to develop the ability to connect their immediate experiences to broader concepts like cultural significance. To support the development of more complex thinking in the future, Susi could continue to scaffold these discussions by introducing more questions, such as *Where have you seen thisubi Cilembu? why is it sweet? why is it not a treat?* as her students’ cognitive abilities grow (Palipane et al., 2020; Taber, 2018). For instance, she could ask them why certain foods might be more common today than in the past, helping to bridge their concrete thinking with more abstract ideas.

Susi’s approach to integrating local wisdom into her teaching through traditional foods shows how CPoP can foster cultural awareness and CCT in young students (Comber, 2015). By connecting her lessons to the students’ everyday experiences and cultural heritage, Susi made learning more engaging and relevant. Her use of questioning and collaborative activities encouraged students to think critically about their cultural context and work together to explore these ideas (Huffling et al., 2017; Sobel, 2004).

While traditional food learning introduces students to an initial understanding of local culture, it has the potential to deepen their critical thinking as they grow. By gradually introducing more complex discussions, such as *if it is sweet, why is ubi Cilembu considered healthy and not just a treat?* Susi can further enhance her students’ ability to reflect on and appreciate thecultural significance by encouraging children’s questions and curiosity about the chef’s demonstration (Johnson, 2012; Surface, 2016; Zimmerman & Weible, 2017). Overall, Susi’s work exemplifies how CPoP can preserve cultural traditions while nurturing essential thinking skills in the classroom.

In conclusion, the teachers in this study understood and applied CPoP as an approach that connected students’ learning to their local environment, community and cultural context. For many teachers, this was a shift from traditional teaching methods, which focused on textbooks that detached from students’ lived experiences. Through the TPL program, teachers understood the importance of contextualising learning to make it more relevant andengaging for students (Bradfield & Exley, 2020; Vermunt et al., 2023). Furthermore, teachers showed their understanding of CPoP by making use of local context and resources. For example, Dewi showed the connection by saying, “We collect trash around the grounds of the mosque and walk around the neighbourhood cleaning up trash, which shows how these experiences ground students in their local context”. Further, Nina stated, “This approach of having students bring natural materials from home to create dyes aligns with the CPoP principle of contextualising learning within the local environment”. Teachers identified the core elements of CPoP as connecting learning to place. They realised that incorporating local knowledge, traditions and environmental issues into their lessons made learning more relatable for students (Lowan-Trudeau, 2017; Martin, 2010; Smith,

2021). Many participants emphasised the value of teaching students about their immediate surroundings, such as making use of natural resources. However, teachers' understanding of the critical aspect of CPoP varied. While some embraced the idea of questioning social and environmental structures, others focused more on the place-based aspect, often with superficial teacher- directed questions.

6.2.4 Spaces and resources

One of the most pressing issues highlighted by the teachers was the limited availability of physical space for creating activities in implementing CPoP and CCT. In the focus group discussion, Fira expressed frustration, stating:

> Our classroom is too small for the students to move freely or work in groups. I have48 students, and we have desks and chairs that are difficult to arrange freely. It's difficult to implement creative activities when there's no room to do so. We also have to share our small schoolyard with the other two schools here. So I can't bringthe students to explore the schoolyard or school environment as we wanted to or based on our needs. We needed to find out first if our colleagues or colleagues from other schools were going to use it or not. It's complicated.

This lack of space restricted the types of learning activities that could be facilitated and limited students' freedom of movement, which is crucial for fostering an environment conducive to CCT and CPoP. In contrast, some schools, like Rani's and Pina's, had enough space for students to explore their surroundings more freely. Rani shared, *"*We are lucky to have a large schoolyard. The students can go outside, explore the schoolyard, and work on environmental projects. It really helps them engage with what they are learning. *"*Similarly, Pina remarked, *"*Having space to move around outside the classroom allows the students to do hands-on activities, like exploring herbs garden, planting or observing plants and animals,or even observing the rice field behind the school wall, which supports their CCT*".*

These examples highlight how the availability of space impacts the ability to implement CPoP and CCT (M. K. Nambiar et al., 2018; Mulcahy et al., 2015). While schools with ample space can facilitate more engaging and interactive learning experiences, those with limited space face significant challenges in providing students with the freedom of movement and exploration necessary for fostering CCT (Haroon et al., 2023).

The traditional classroom setting could pose a barrier to creativity and collaborative learning.In many schools such as Yuna's, Fira's, Euis' or Anna's, classrooms were arranged with desks in rows and the teacher positioned at the front of the room, reinforcing a teacher- centred approach rather than the student-centred methods required for CPoP. This fixed arrangement lacks flexibility, making it difficult to rearrange the space for group work or PBL activities. The rigid layout hindered opportunities for students to engage in CCT tasks that required collaboration and discussion

(Reinius et al., 2021).

I also observed and wrote in my field notes that the physical environment of the classrooms, including the use of curtains that blocked natural light and views of the outside world, contributed to a sense of confinement. According to Ika, using curtains in the classroom canhelp limit distractions for young learners, especially by reducing the impact of external stimuli. This can be particularly beneficial as young learners are easily distracted by activities happening outside the classroom, and the use of curtains can create a focused learning environment. However, this setup was not conducive to fostering CCT because the lack of openness, the limited freedom of movement, the possibilities of what the students can do around the place, and the lack of exposure to the outside world hindered their ability to think critically and creatively (Rands & Gansemer-Topf, 2017). The closed nature of the classroom environment contrasted with the openness and flexibility needed to encourage exploration and critical engagement with the surrounding environment, which are key principles of CPoP.The room arrangement could be designed to allow engagement and flexibility and to open students centred spaces (Rands & Gansemer-Topf, 2017; Reinius et al., 2021).

Many teachers like Fira, Lela and Yuna, also faced significant time constraints, which inhibited their ability to implement CPoP fully. Most school schedules are limited to 2.5 hours of learning each day from Monday to Saturday, making it challenging to incorporate extended projects or in-depth discussions (Doppenberg et al., 2012; Baharudin et al., 2013). Time limitations reduce opportunities for critical reflection and creative problem-solving, both of which are central to fostering CCT (Cansoy & Türkoğlu, 2022; Teig et al., 2019). Without adequate time to engage students in sustained inquiry, the benefits of CPoP are diminished (Teig et al., 2019).

Additionally, the high student-to-teacher ratio further complicated the learning environment. With a large number of students in each class, teachers found it difficult to provide personalised attention, making it harder to implement strategies that promote CCT (Asodike & Onyeike, 2016; Blatchford et al., 2011). Managing these larger groups while integrating CPoP approaches required more flexibility in teaching methods and classroom management, but the available resources did not always support this need (Marzulina et al., 2021).

Teachers also shared that the limited number of expert teachers and facilitators presented another challenge for the implementation of CPoP. Several teachers expressed concern over the shortage of experienced educators who could guide and mentor them in incorporating CPoP and fostering CCT. Without sufficient expert support, the teachers felt they were left to navigate the complexities of these pedagogical approaches on their own, which hindered their professional growth (Rahman, 2022). Although some regions have teachers who are *Guru Penggerak* – teachers trained to be agents of change – it doesn't always guarantee effective support for all educators. As one teacher, Ana, expressed during the focus group discussion, *"*We have a few *Guru Penggerak* in our region,

but they are often too busy managing multiple schools, and they don't always have the deep knowledge of CPoP we need. Because I think CPoP is new for us all." This highlights the limitations in accessing consistent and specialised support, leaving many teachers without the necessary guidance to effectively implement these approaches.

6.3 The enablers and inhibitors of implementing critical pedagogyof place in fostering critical and creative thinking

This section discusses the various factors that either supported or hindered the successful implementation of CPoP in fostering CCT among students. Drawing from the experiences of the teachers, the discussion provides insights into the practicalities of implementing CPoP in primary education and offers recommendations for overcoming challenges to maximise its potential in enhancing students' CCT.

6.3.1 Enablers of critical pedagogy of place in fostering critical and creative thinking

The four factors that enabled CPoP to foster CCT are detailed below. These factors emerged from the thematic analysis of the data collected through interviews, focus group discussions, and classroom observations.

6.3.1.1 Teacher motivation and engagement

Teachers' motivations to integrate CPoP into their classrooms varied, stemming from personal drive, practical considerations, professional learning experiences and support from school leadership. For example, Mia stated, "I believe that by making learning more interactive and connected to their surroundings, I can inspire my students to be more curious and thoughtful about the world around them". The teachers believed nurturing this connection is vital for students' learning and development. Pina said, "I wanted to help my young students to feel more connected to their surroundings".

The findings show that the teachers' enthusiasm for connecting students with their local environment and culture was pivotal to their ability to foster CCT, as shown by their willingness to implement CPoP in their classrooms (Pikon et al., 2016; Wagner, 2020; Wlodkowski, 2008). Studies have found that teachers' motivation is a critical enabler in implementing new pedagogical approaches successfully (Day & Gu, 2014). Without such intrinsic motivation, innovative approaches like CPoP may falter in their application (Ryan &Deci, 2000).

Teachers also argued that support from their school leaders influenced their motivation to implement the CPoP they learned in the TPL:

> Our principal has been very supportive in providing the necessary resources and time for us to explore and implement CPoP strategies. She gave us the freedom to create learning activities that benefit the students. Moreover, she was the one whoencouraged me to join the TPL. So she supported me in implementing the new things [knowledge and skills] and shared with my colleagues at school. This kind ofsupport makes a big difference in my ability to try new things in the classroom. (Nina)

Nina shared that the principal's encouragement and support gave her the confidence to experiment with new ideas and fostered a collaborative environment among teachers. This level of support from school leaders, as Nina explained, was crucial in motivating her and her peers to take risks, adapt new teaching strategies and create learning experiences that were more meaningful and connected to their students' local environments. This support fosters an environment where teachers feel valued and encouraged to try new strategies, which is vital for the successful implementation of innovative pedagogies like CPoP (Rahman, 2022). The literature supports the idea that school leadership plays a pivotal role in promoting and sustaining educational innovations (Wagner, 2020).

6.3.1.2 Relevance of local context

One of the major enablers of CPoP in fostering CCT is the relevance of the local context to students' lives. By focusing learning in the students' immediate environment, CPoP made lessons more relatable, meaningful and accessible (Cravey, 2012; Perveen, 2015). For instance, Susi's focus on traditional foods and Rani's recycling project connected students to their cultural and environmental contexts and promoted critical and creative problem-solving. Smith and Sobel (2010) argue that PBE fosters deep engagement by situating learning within the student's lived experience, making abstract concepts more tangible and fostering CCT through real-life application.

The teachers differed in their emphasis on cultural versus environmental aspects of the students' immediate context. For example, Pina's project was culturally oriented, focusing on family dynamics and social roles, while Lela and Euis centred their lessons around the natural environment, using local resources to teach mathematics. Ana's activities combined both drawing on cultural elements through the drawing activity and environmental awareness through discussions on healthy eating. These variations reflect the diverse ways in which CPoP can be applied, depending on the teacher's focus and the specific needs and context of the students (Bowers, 2008; Cicchino et al., 2022; Madden, 2016; McInerney et al., 2011; McVicar, 2021).

6.3.1.3 Community involvement

Another enabler was the community's involvement in the learning process. Yuna's project on cleaning, for example, extended beyond the classroom, engaging students, parents and the school community in discussions and taking action in making improvements to school buildings, for

example, when her students initiated a proposal to improve their school facilities in particular involving local tradesmen such as carpenters, electricians and builders in repairing the unused classroom. Community participation enriched the learning experience and fostered a sense of shared responsibility for education, which aligned with CPoP's goals of promoting social and environmental awareness and building connections with the community (Greenwood, 2012). By involving the community, students were able to see the direct relevance of their decision-making in the planning and development of their immediate surroundings, reinforcing CCT about their role in society.

6.3.1.4 Collaborative learning

Teachers like Yuna, Dewi, Nina and Rani emphasised group activities and collaborative learning, which are essential to CPoP. Dewi's project on environmental issues and Rani's recycling initiative were both designed to encourage teamwork, problem-solving and the sharing of ideas. Collaborative learning environments support the development of CCT by allowing students to learn from one another and explore new perspectives (Gillies, 2016). This aligns with Vygotsky's (1978) social constructivist theory, which posits that cognitive development is enhanced through social interaction and collaborative problem-solving withthe community, not just with the teacher (Cherry, 2024; Saleem et al., 2021).

6.3.2 Inhibitors of critical pedagogy of place in fostering critical and creative thinking

This research found five inhibitors contributing to difficulties in fostering CCT. These inhibitors include overcrowded classrooms and limited resources, time constraints and rigid schedules, traditional pedagogical norms, lack of professional learning and support, and teachers' understanding of CCT and CPoP. Each of these factors plays a role in hindering the effective implementation of CPoP to cultivate CCT in the classroom setting.

6.3.2.1 Overcrowded classrooms and limited resources

One of the most significant inhibitors to the successful implementation of CPoP was overcrowded classrooms and limited resources. Fira's classroom, with 48 students and shared spaces, presents a clear example of how physical limitations can hinder the effectiveness of CPoP. The constant distractions and lack of focus among students in her classroom made it challenging to foster the deep engagement necessary for CCT. Overcrowded classrooms are a widespread issue in many developing countries, and studies have shown that high student-teacher ratios can negatively impact the quality of education and the ability to implement student-centred pedagogies (Blatchford, Bassett, & Brown,2011).

6.3.2.2 Time constraints and rigid schedules

The findings reveal that time constraints are a significant inhibitor to the full implementation of CPoP, as highlighted by teachers like Fira, Lela and Yuna. The limited school schedules, often confined to 2.5 hours of learning per day from Monday to Saturday, create challenges for integrating CPoP strategies effectively. This time restriction inhibits the ability of teachers to engage students in extended projects, in-depth discussions, and hands-on activities that are central to CPoP and the development of CCT.

CCT activities are processes that require time for exploration, inquiry and revision. However, the restricted schedule does not allow for sustained engagement with these learning methods. According to Cansoy and Türkoğlu (2022) and Teig et al. (2019), when students are not provided with adequate time to delve into meaningful, real-life problems, their ability to think critically and creatively is compromised. The rushed nature of short class periods reduces opportunities for students to engage in iterative thinking, where they can reflect on their learning, challenge assumptions, and propose solutions to community-based issues.

CPoP requires a degree of flexibility in the classroom, where projects and discussions can evolve based on student interests and real-life connections (McVicar, 2021; Rubel et al., 2015). The time limitations, however, make it difficult for teachers to adapt lessons dynamically and allow the depth of inquiry that CPoP advocates. Without sufficient time, teachers often revert to more traditional, teacher-centred approaches that prioritise covering curriculum content over fostering CCT.

6.3.2.3 Traditional pedagogical norms

Many teachers struggled with balancing CPoP's student-centred approach with traditional pedagogical norms that emphasise rote learning and teacher-directed instruction (Revina etal., 2020). For example, Pina and Lela found it challenging to break away from more traditional, textbook-based activities, which limited their ability to foster CCT. This challenge is common in educational systems that have long relied on exam-driven curricula, where there is pressure to adhere to standardised practices that do not prioritise CCT (Leite et al.,2020; Liu et al., 2018; Zakaria et al., 2013). Further, the community beliefs, specifically parents' beliefs about learning, which should be reading, writing and arithmetic, heavily influence the students' and teachers' mindsets. Basic literacy and numeracy became the standard for most parents to see from their children's academic achievements.

6.3.2.4 Lack of professional learning and support

The lack of sustained professional learning and support for teachers implementing CPoP was another major barrier. Teachers expressed uncertainty in navigating the shift from teacher-centred to student-centred pedagogies, especially when they needed more ongoing guidance. While initial training may introduce the principles of CPoP, continued professional learning is necessary for many teachers to prevent them from reverting to traditional teaching practices when faced with

challenges (Hargreaves & Fullan, 2012). Continuous TPL is crucial for helping teachers refine their approach to classroom practices and fully integrate CPoP into their teaching to sustain their progress in developing their pedagogical methods (Smith & Loughran, 2017; Tooth & Renshaw, 2009).

6.3.2.5 Teachers' understanding of critical and creative thinking and criticalpedagogy of place

While Susi's approach got students to think about their personal experiences in relation to traditional and modern food, it also brought up an important challenge for teachers. When students share their beliefs – especially those tied to cultural traditions – teachers need to help them think critically about these ideas. In addition, the conversation between Haris and Aris in Pinas' classroom activities shows that while students are encouraged to explore theiridentities, it is also important for teachers to be able to ask quality questions to reflect on the beliefs they've grown up with, such as gender roles. Teachers need to balance respecting students' backgrounds with encouraging them to think more deeply about why they believe what they do and how it affects others. Activities involving the integration of CPoP and CCT should also be encouraged and practised among the teachers themselves (Prada-Núñez et al., 2020). The teachers stated that their experience in TPL influenced positively on their knowledge and skills of CCT and CPoP. However, my observation revealed that many teachers had a superficial understanding of CCT. While they contributed to discussions on CPoP and CCT, their engagement often lacked depth, focusing more on surface-level applications without critically engaging with the deeper principles of CCT, such as fostering independent, CCT and challenging preconceived notions (Qiana M. Cutts, 2012; Häggström& Schmidt, 2020a; Kelley & Pelech, 2019; Manahan, 2006).

As a teacher's understanding is the foundation that develops classroom practices, and many teachers showed superficial understanding, I reflected that while the TPL program showed some improvement and some signs of CCT, there is still a need for further development (Van Schalkwyk et al., 2015). A deeper emphasis on CCT, reflective exercisesand practical applications of CPoP and CCT could enhance the program's impact (Fook, 2015; Hallinger, 2003; Training, 2018). By providing more opportunities for hands-on experiences and critical engagement with content, the program could help teachers better integrate CPoP and CCT into their lessons, fostering greater student autonomy and creativeproblem-solving (Bassachs et al., 2020; Wilson & Wing Jan, 2009).

6.4 The teachers' observations about the students' responses to implementation

The varying degrees of student autonomy and the thematic focuses of the CPoP activities have implications for student engagement and the development of CCT. The teachers observed distinct changes in student behaviour, participation and thinking processes as a result of the implementation. For instance, Nina observed that her students became more engaged and excited

when given the opportunity to explore their environment and use locally available resources creatively, which was a central aspect of her project. She noted, “I saw how the students’ curiosity increased. They began asking more questions about the environment and started thinking of ways to use materials they brought from their home and materials found around the school to create something new.” As part of her project, which encouraged students to connect with their surroundings and apply traditional values in practical ways, Nina remarked that this process fostered a sense of environmental stewardship. Students showed pride in their work, demonstrating greater awareness of how their actions impacted their local surroundings. By promoting creative thinking and sustainability, Nina’s project helped students engage more deeply with the material and develop a stronger connection to their community and environment. (Gruenewald & Smith, 2014; Greenwood, 2012).

Mia’s integration of culturally relevant storytelling into her pedagogical practice further highlights the potential of CPoP to foster CCT while supporting students’ moral development. This approach aligns with Paris and Alim’s (2017) concept of culturally sustaining pedagogy, which emphasises the importance of cultural relevance in education. By guiding her students through discussions on how to treat others and being aware of others’ feelings present in local stories, Mia promoted students’ engagement and fostered an empathetic classroom environment. Such an environment is crucial for addressing social issues among young learners, as it encourages them to consider diverse perspectives and to develop a sense of empathy as part of social awareness and building relationships in the community (Noddings, 2002).

Mia observed a noticeable shift in her students’ social behaviour after integrating culturally relevant storytelling into her lessons. “I noticed that the students became more empathetic towards one another. After we discussed stories about kindness and treating others well, students were less likely to tease or mock their classmates. I even saw students reminding their peers to be kind,” Mia shared. These observations indicate that storytelling not only engaged students in moral discussions but also had a direct impact on their social interactions, fostering a more empathetic classroom environment. Mia shared in the focus group discussion that using local stories promoting empathy changed her students’ social awareness. The act of mocking and teasing was lessened among the students as the other students would also remind their classmates who mocked.

However, Mia’s storytelling sessions, while effective in the short term, raise important questions about the sustainability of these positive behavioural changes. Research suggests that values like empathy require consistent reinforcement to become deeply ingrained in students’ behaviour (Noddings, 2002). To ensure the long-term impact of her efforts, Mia could incorporate daily reflective practices and community-based projects, providing students with continuous opportunities to apply the values they have learned (Banks, 2015).

Similarly, Pina's use of discussion, though more structured, provided students with opportunities to reflect on their social roles and relationships by celebrating diversity in the classroom. This form of CCT is reflective and relevant to the students, aligning with the principles of CPoP that advocate for education rooted in students' social and cultural experiences (Gruenewald & Smith, 2014). Pina noticed that when her students participated in discussions about diversity and community roles, they became more reflective about theirown social roles and responsibilities. "I saw that students were starting to appreciate the differences among their peers more. They were eager to share their experiences and listen to others during discussions, which made them more considerate," she observed. This change in behaviour highlights the power of connecting classroom activities with students' lived experiences, leading to deeper engagement and thoughtful reflection (Greenwood, 2012).

Euis's teachable moments of learning appeared to foster student engagement and inquiry. By actively involving students in the learning process, Euis enabled them to explore scientific concepts in a way that was directly relevant to their immediate environment, which is fundamental to CPoP. Euis noted a shift in her students' engagement after incorporating more active learning strategies. "Before, the students were very passive. They would just sit and listen. But after I started using more hands-on activities, I saw them get excited about learning, especially when they got to conduct experiments or solve problems," she reflected. Euis observed that her students were more eager to participate and demonstrated an increased curiosity, especially during scientific activities. "For example, they were fascinated by the scientific burning experiment and asked so many questions. It was clear they were enjoying learning in a way that was new for them," she added. This approach is supported byBansal and Nagpal (2015), who argue that creativity is best acquired through active engagement. Euis highlighted that her students' active involvement in learning was considered an achievement as the students used to be passively involved in the learning.

Before my intervention, students were expected to sit and listen, but after TPL, they gradually became accustomed to being actively involved in their learning. She also saw that her students enjoyed learning as they satisfied their curiosity, for example, scientific burning.

In Lela's case, the deeply ingrained traditional educational paradigm posed a significant challenge. Both parents and students initially equated learning with textbook-based activities, rote learning and teacher-led instruction, reflecting a colonial legacy prioritising uniformity and control over innovation and critical engagement (Sudibyo, 2018). Yuna's efforts to decolonise this paradigm by introducing CPoP approaches – such as the cleaning project – demonstrate how traditional expectations can be challenged. Yuna observed gradual improvement as the students began to engage in more questions, suggest solutions and takeownership of tasks, fostering active student engagement. Through these activities, Yuna moved from rote learning to a more dynamic, student-centred pedagogy that encourages CCT and engagement with the local environment (Greenwood,

2008).

The observations from these teachers regarding the students' learning outcomes demonstrated that CPoP could enhance students' social and environmental awareness and connections to their cultural and local contexts. However, the success of these initiatives in the future depends on the teachers' ability to navigate the challenges inherent in shifting away from traditional pedagogical paradigms and towards more dynamic, student-centred approaches. Careful planning to encourage students to develop CCT skills isalso an important factor for the success of implementing CPoP through CCT.

6.5 Conclusion

The findings and discussion in this chapter have provided an understanding of how teachers interpret and implement CPoP to foster CCT in primary education. They revealed that the teachers' understanding of CCT evolves when integrated with CPoP, leading to more meaningful and contextually relevant teaching practices. The teachers moved from traditional approaches and teacher-centred pedagogy to more dynamic, student-centred pedagogy connecting learning to students' experiences and local contexts. The study highlighted teachers' challenges in this transition, such as balancing cultural relevance with student engagement and overcoming logistical limitations. However, it also highlighted the potential of CPoP to promote CCT, focusing on social and environmental consciousness and building meaningful relationships with local context and community, thereby preparing students to beactive, thoughtful members of their communities.

The findings from this chapter have important implications for educational practice and policy. For practitioners, the research suggests that effective implementation of CPoP requires a shift towards more student-centred learning environments deeply connected to local cultural and environmental contexts. Teachers should be encouraged and supported tointegrate local wisdom and real-life issues into their curricula, fostering a more holistic approach to education that emphasises CCT learning outcomes. For policymakers, these insights call for re-evaluating current educational standards and TPL programs. Policies should be crafted to provide teachers with the necessary resources, training and support to implement CPoP effectively. This includes creating professional learning communities encouraging teacher collaboration and ongoing reflection on their practices.

The final chapter further explores the broader implications of these findings. The concluding chapter synthesises the overall contributions of this research to the fields of CPoP and CCT, highlighting the impact of this study on educational theory, practice and policy. It also reflectsthe study's limitations and suggests directions for future research. By doing so, the final chapter offers a conclusion emphasising the significance of integrating CPoP into primary education to foster CCT connected to local cultural and environmental contexts.

CHAPTER 7: CONCLUSION

7.1 Overview of the study

This study investigated how teachers can be supported in understanding and implementing CPoP to promote CCT in Grade 1 primary schools in the BMA of Indonesia. The study explored teachers' intentions, knowledge and classroom practices in relation to CPoP and examined how these practices contribute to fostering CCT in students.

Conducted in two stages, the research provided insights into both teachers' evolving pedagogical approaches and the factors that either facilitated or hindered their success. Study 1 focused on teachers' intentions and understanding of CPoP and CCT, while Study 2 focused on teachers' classroom implementation. The findings indicate keydifferences in teachers' approaches to fostering CCT and outline challenges in applying CPoP principles in classroom settings.

7.2 Key findings and discussion

This section discusses and summarises the findings from the four research questions. It synthesises the key insights derived from the analysis, highlighting how each question has contributed to understanding the implementation of CPoP to foster CCT among primary school teachers.

7.2.1 Teachers' intentions in implementing critical pedagogy ofplace (Study 1)

Teachers' intentions in implementing CPoP largely focused on fostering environmental responsibility and social awareness. They aimed to connect lessons to local ecological issues, such as through school cleaning activities, to develop students' sustainability awareness from a young age (Willms, 2001). Additionally, teachers sought to nurture empathetic and socially responsible individuals by addressing real-life societal issues, such as using peer conflicts to foster empathy and social learning.

Teachers also integrated cultural heritage into lessons (Comber, 2014) by incorporating local traditions and partnerships with community leaders (Sobel, 2004). While these activities engaged students with their cultural roots, they often lacked the depth of critical thinking and reflection needed to fully enhance CCT. Similarly, efforts to move away from rote learning focused more on participation than deeper analysis, limiting the overall impact on CCT development. In summary, the teachers intended to create learning around real-life problems and cultural contexts, but the lack of structured reflection and critical engagement hinderedthe full realisation of CCT goals.

7.2.2 Teachers' understanding of critical and creative thinking through TPL (Study 1)

Teachers understood CCT through key terminologies (e.g., problem-solving, critical analysis), basic classroom strategies (e.g., open-ended questions) and spontaneous teachable moments. While they recognised the importance of these concepts, their application often remained at a surface level, limited to routine activities that did not deeplychallenge students' thinking.

Spontaneous moments, such as reflecting on classroom interactions or local issues (Haug, 2014), provided opportunities for CCT, but they were rarely integrated into a sustained, strategic approach. This suggests that while teachers grasped the theoretical importance of CCT, their classroom practices did not fully support deeper student engagement. To address this, further professional learning is required to move beyond basic strategies and support teachers in consistently embedding CCT into their daily teaching practices.

7.2.3 Teachers' understanding of critical pedagogy of place as part ofclassroom teaching practices through TPL (Study 2)

Teachers demonstrated varying levels of understanding and application of CPoP in the classroom. Many connected lessons to real-life issues, such as environmental projects andsocial empathy stories (Häggström & Schmidt, 2020a), which resonated with students' daily lives (Johnson, 2012; Surface, 2016; Zimmerman & Weible, 2017) and promoted active learning (Gackowski, 2003; Gruenewald, 2003b; Petrucco, 2019). These activities engagedstudents in hands-on, collaborative tasks that fostered responsibility towards their surroundings and community (Q. M. Cutts, 2012; Gruenewald, 2003a).

For Grade 1 students, learning is most effective when connected to tangible, real-life experiences (Harris & Manatakis, 2013). However, while these projects introduced ethical thinking and problem-solving, further scaffolding is needed to deepen critical reflection as students' cognitive abilities develop. Teachers encouraged student agency, allowing studentsto take ownership of tasks and make decisions, which promoted independence and leadership (Huffling et al., 2017; Sobel, 2004).

Teachers connected learning to local wisdom, cultural heritage and community practices (Greenwood, 2008; Martin, 2010; Martusewicz et al., 2011)., but there is a need for professional learning to strengthen the critical aspects of CPoP, particularly in fostering inquiry and challenging social norms.

7.2.4 The enablers and inhibitors of implementing critical pedagogyof place in fostering students' critical and creative thinking (Study 2)

Several enablers supported CPoP implementation, including teacher motivation, the relevance of local contexts, community involvement, and collaborative learning environments. Teachers committed to connecting students with their immediate surroundingsfound CPoP an effective tool

for fostering creative problem-solving and meaningful engagement (Kelley & Pelech, 2019).

However, inhibitors such as overcrowded classrooms, time constraints, and traditional pedagogical norms posed significant challenges. Overcrowding made it difficult to implementhands-on, student-centred activities, while rigid schedules limited the time available for critical reflection and creativity. Furthermore, the reliance on rote learning conflicted with the student-centred nature of CPoP, and the lack of sustained professional learning hindered the full embrace of CPoP principles. To overcome these barriers, targeted support is essential, including strategies for managing large classes, flexible learning schedules and ongoing professional learning.

7.2.5 The teachers' observations about students' responses tocritical pedagogy of place implementation (Study 2)

Teachers observed that CPoP projects, such as environmental exploration and community- based activities, encouraged students to think critically and creatively. Students responded positively to interactive and place-based pedagogy, with initial improvements in empathy, cooperation and problem-solving noted. However, transitioning from traditional textbook- based learning to more dynamic, student-centred approaches was challenging. While students engage actively in discussions and hands-on projects, there is a need to reinforce CCT throughout the learning process to ensure long-term impact. This can be achieved through consistent reflection, ethical questioning and sustained engagement with community-based projects.

7.2.6 Conclusion and the key findings in response to the research questions

In conclusion, the findings from this study highlight how CPoP offers the potential for fostering CCT in Indonesian primary schools. By connecting education to students' local environments, culture and community, CPoP makes learning more relevant and meaningful,encouraging students to engage deeply with real-life issues. The integration of PBL within the classroom showed the potential to stimulate critical inquiry and creative problem- solving among students.

Teachers in this study demonstrated that when students are encouraged to explore local cultural practices, environmental sustainability and social issues, they are more likely to thinkcritically about their surroundings and creatively approach problem-solving. CPoP supports the development of social awareness and environmental responsibility, providing students with a framework for understanding their role in their communities. These insights underline the potential for CPoP to create transformative educational experiences, promoting deeper engagement with both content and context and ultimately fostering more robust CCT skills instudents.

Thus, the study answers the central research question by showing that CPoP, through its focus on local context and community engagement, creates a strong foundation for fostering CCT in primary education. This framework could be an effective tool for Indonesian primary school teachers to

promote higher-order thinking skills in students, other teachers, parents and the community. Such skills are crucial for addressing the complexities of today's world and future challenges.

7.3 My growth

As I began this thesis with a personal story, it is only fitting to conclude with one as well. The journey of completing this PhD has not only been a scholarly pursuit but also a deeply transformative experience, both personally and professionally. I was challenged to think differently and to move beyond simple rationalism. The process of engaging with new insights and perspectives reshaped how I viewed my research, my teaching, and even myself. One particularly transformative moment came during my visit to a regional school in South Australia. This experience opened my eyes to the nuances of teaching and learning indifferent contexts, leading me to reflect on the practices I had seen in Indonesia. It allowed me to see the gaps, challenges and opportunities in a new light. Equally impactful was a conversation with an Indonesian woman scholar who shared her dedication to education and environmental care. Her continuous support for her community and her drive for better education inspired me to pursue this study with a sense of purpose and commitment.

The collaborative relationship I built with my supervisors evolved into a CoP. Through continuous dialogue, I was encouraged to think, rethink and challenge my own analytical processes. My supervisors helped sharpen my analytical thinking, and through our discussions, I came to appreciate how different perspectives can illuminate new insights in the data. These exchanges were crucial in helping me navigate the complexities of my research and refine my understanding of both the theoretical framework and its practical application.

I also developed a close relationship with the teachers involved in my study, further strengthening the CoP. Working closely with them over time, I observed their practices and became part of their professional learning journey. We built trust and collaboration through shared experiences, open discussions and mutual learning. This relationship went beyond mere observation; it became a process of co-creation, where we collectively explored how to implement CPoP and foster CCT in their classrooms. The teachers shared their challenges and insights, and in turn, I offered guidance and support. This ongoing dialogue allowed us to learn from one another, blending theory with practice meaningfully. This partnership reinforced the importance of community and mutual learning in the research process and professional learning.

In this journey, I was forced to confront and reflect on my TPL model and the integration of CPoP with CCT. This reflection raised essential questions: How do I make it work? How do I ensure its impact? The results were only sometimes what I initially envisioned, and the process was filled with unexpected challenges. However, these moments of difficulty prompted deeper evaluation and refinement, leading to a more nuanced and thoughtful approach to my model. Though the outcome

was not perfect, the iterative process of questioning and re-evaluating ultimately strengthened my work and broadened my understanding of the complexities involved in educational transformation.

Reflecting on this PhD journey, it has been far more than an academic exercise. It has been a path of personal growth where I have learned to embrace new ways of thinking, challenge my assumptions, and refine my approach to education and research. My relationship with the teachers, the CoP with my supervisors, and the ongoing reflections on my model have deepened my understanding of collaborative learning. It is through this journey that I have come to appreciate the power of reflection, collaboration and perseverance, which will continue to guide my work in the future.

7.4 Contributions to research and practice

The findings from this study demonstrate that CPoP holds significant potential for fostering CCT and promoting greater social awareness, environmental stewardship, and cultural engagement in students. As a community of practice, this study's results cannot be generalised to other contexts of TPL (e.g. Efron & Ravid, 2013; Kemmis & McTaggart, 1988;Zuber-Skerritt & Fletcher, 2007).

7.4.1 Bridging critical pedagogy and critical and creative thinking

One of this study's most significant contributions is its exploration of the interplay between CPoP and CCT. It highlights how learning in the local environment, community, andculture makes education more relevant and stimulates students to think critically and creatively. The findings show that through CPoP, the students were encouraged to practice their deep thinking by being challenged to consider real-life issues, develop solutions to localproblems, and question existing social and environmental practices.

7.4.2 Insights into teacher practices

This study contributes to understanding how teachers interpret and implement CPoP principles in classroom settings. It uncovers the strengths and limitations in teachers' ability to transition from traditional teacher-centred practices to more student-centred approaches that emphasise local context and CCT. The research identifies key enablers, such as teachermotivation and community involvement, as well as inhibitors, including time constraints and limited professional learning. These insights are valuable for future TPL programs, highlighting the need for ongoing support and professional learning to help educators effectively integrate CPoP and CCT into their teaching.

7.4.3 Addressing contextual challenges in primary education

The study highlights the specific challenges of implementing CPoP in the context of Indonesian primary schools, where large class sizes, rigid curricula and cultural expectations around education pose significant barriers. By documenting the efforts of teachers to overcome these obstacles, the

research provides practical recommendations foradapting CPoP to environments with limited resources and traditional pedagogical norms. Professional learning programs should be restructured to offer continuous support and hands-on training in CPoP and CCT and focus on building the capacity to navigate contextual challenges, such as large class sizes and rigid scheduling, by offering practicalstrategies for adapting CPoP to various environments.

7.4.4 Implications for policy and curriculum development

Curriculum developers should focus on integrating CPoP principles into the broader framework of the *Merdeka* curriculum. This involves embedding place-based learning activities that foster environmental and cultural awareness while developing students' CCT. By aligning CPoP with national educational goals, such as those outlined in the *Merdeka* curriculum, education can become more meaningful, connected to students' lives, and relevant to their local context. This approach will enhance the overall impact of the curriculum by engaging students in real-life issues and encouraging them to think critically about theirsurroundings and social environment.

In addition, the CoP model proposed in this study complements the *Merdeka* curriculum by offering a structured framework that supports teachers in implementing CPoP in their classrooms. The CoP model promotes peer collaboration, reflection, and continuous learning, which can help teachers shift from traditional methods to more student-centred approaches. This allows for a more effective integration of place-based learning that strengthens students' connection to their local culture and environment while developing theirhigher-order thinking skills.

While the *Guru Penggerak* program has laid a strong foundation for teacher leadership and professional development in Indonesia, the findings from this study suggest that integrating alternative models like CoP can enrich the national landscape for TPL. The CoP model offers a collaborative, community-based approach to professional learning, which complements themore structured, top-down approach of G*uru Penggerak*. Together, these models provide diverse avenues for professional growth, catering to the different needs of teachers across various contexts.

Supporting CoP models alongside the *Guru Penggerak* initiative would provide greater flexibility in how teachers engage with professional learning. CoP offers opportunities for deeper reflection, contextual adaptation and peer collaboration, allowing teachers to more effectively address local challenges and implement CPoP meaningfully. By providing resources and support for CoP-based professional learning, policymakers can ensure thatteachers have multiple pathways to develop their skills, ultimately enhancing their ability tofoster CCT in students.

7.4.5 Long-term sustainability of critical pedagogy of place practices

The study also contributes to understanding the long-term sustainability of CPoP initiatives,

suggesting that while short-term gains in student engagement and CCT are evident, sustained efforts are needed to embed CPoP deeply within the educational system to ensure that its benefits endure beyond individual projects or lessons.

In summary, this study adds to the academic discourse by illustrating how CPoP can be an effective framework for promoting CCT in primary education. It provides both theoretical insights and practical recommendations, contributing to the development of more student- centred teaching approaches rooted in the local cultural and environmental context. The study's findings offer a path forward for educators, policymakers and curriculum developerswho seek to create more meaningful and impactful learning experiences for students.

7.5 Limitations of the study

The study was conducted with Grade 1 teachers in the BMA, which may limit the generalisability of the results to other grade levels, regions or educational systems. The geographical and cultural specificity of the BMA means that the teachers' understanding and implementation of CPoP may reflect unique regional and sociocultural factors. In other regions with different educational priorities, resources or community contexts, the outcomes of CPoP might vary. Therefore, applying these findings to a broader context requires careful adaptation and consideration of local cultural differences, educational practices and policies.

My research was based on teacher-reported data, relying on teachers' self-reflections and observations to assess the impact of CPoP on fostering CCT. While teacher insights are valuable, they can be subject to biases such as selective memory, social desirability or individual perceptions of success. This introduces potential limitations in accurately gauging the full effects of CPoP on classroom dynamics and student learning. The absence of direct student feedback further constrained the study's ability to understand how students personally engaged with CPoP and CCT. Future research incorporating student voices would provide a more balanced and comprehensive view of how these pedagogical strategies impact learning.

Another limitation is the restricted timeframe of the study, which was confined to the duration of the PhD project. This constraint limited the ability to observe the long-term effects of CPoP on both teachers and students. While short-term shifts in teaching practices and initial engagement with CCT were documented, the study does not capture whether these changes were sustained over time or how they evolved as teachers became more comfortable with the pedagogy. Without longitudinal data, it is difficult to assess the lasting impact of CPoP on student outcomes or teachers' professional growth. Although time constraints are a common limitation in doctoral research (Zuber-Skerritt & Fletcher, 2002, 2007), they remain an essential consideration for understanding the full scope of this study's findings.

Additionally, the sample size of this study was relatively small, focusing on a specific group of teachers within a particular region and cultural context. While the CoP approach allowed for an in-depth exploration of teachers' experiences and detailed case studies, the small sample size limits the transferability of the findings to other educational settings. The results may reflect the unique dynamics of the participating schools, and further research with larger, more diverse groups of teachers across different regions would help validate and broaden the applicability of the findings. In contexts with different cultural, educational or institutional structures, the results might differ, necessitating localised adaptations of the CPoP framework.

Another critical limitation is the resource constraints in the participating schools; limited teaching materials and lack of infrastructure that created challenges for teachers in fully implementing CPoP. These conditions likely affected the scope of critical inquiry and creativity that could have been fostered under more favourable circumstances. Teachers hadto adapt CPoP principles to work within these constraints, which may have dampened the overall impact on fostering CCT. The study highlights the importance of considering the real- life limitations faced by teachers, as these resource shortages can impede the depth of CCT that CPoP aims to nurture.

While this study provides valuable insights into how CPoP can promote CCT inprimary education, its findings should be interpreted with caution. The context-specific nature, small sample size, reliance on teacher-reported data, and the short-term scope of the study are key limitations that impact the generalisability and depth of the conclusions. Future research could address these gaps by incorporating longitudinal studies, direct student feedback, and larger, more diverse samples and exploring how CPoP can be adapted to different educational and cultural contexts.

7.6 Recommendations for future research

Based on this study's findings and limitations, several recommendations for future research emerge, particularly regarding the long-term implementation and impact of CPoP on fostering CCT in primary school settings.

1. Longitudinal studies: Given that this study was limited to a short-term view, future research should focus on conducting longitudinal studies that examine the sustained impact of CPoP on both teachers and students. Long-term studies would allow researchers to track the evolution of pedagogical practices and student learning outcomes over time, providing a clearer picture of how CCT develops through CPoP in diverse contexts.
2. Multiple research cycles: Expanding the research to include multiple cycles of AR would deepen the understanding of how teachers adapt to CPoP over time and how their practices evolve with continued support and reflection. Each cycle could address specific challenges identified in earlier phases, providing iterative improvements and further insights into the dynamics of CPoP and its role in fostering CCT.

3. Student perspectives: Future studies should place a greater emphasis on directly capturing student feedback and experiences. While this study focused on teachers' observations, integrating students' voices through interviews, focus groups, or surveys would provide a richer understanding of how they perceive and engage with CPoP-informed lessons. This would also help assess how CCT is perceived and internalised by students.
4. Broader contexts: Research should also be conducted in a wider variety of educational contexts, both in Indonesia and overseas, to explore how CPoP might be adapted to different cultural, socioeconomic, and learning environments. By comparing different settings, future studies could identify context-specific enablers and challenges, helping to create more generalisable models of CPoP implementation.
5. Inclusion of parents and community feedback: Since CPoP involves not only the classroom but also the broader community, future research should explore the role of parents and community members in supporting or inhibiting CPoP practices. This can help in understanding how external perceptions of education influence the successful implementation of place-based pedagogies and how community partnerships could be further leveraged to support CCT development.
6. Exploring the critical dimension: While some teachers in this study engaged with the critical aspects of CPoP, others struggled to move beyond the place-based focus with superficial understanding. Future research should examine ways to deepen teachers' engagement with the critical dimensions of CPoP.
7. Impact of class size and resources: Further research could investigate how classroom dynamics, including overcrowded classes and resource constraints, affect the implementation of CPoP and the development of CCT. Identifying strategies for overcoming these barriers would be valuable for teachers working in challenging environments.

7.7 Final thoughts

Reflecting on where I stand now, it's clear that this journey has fundamentally shifted my approach to education and research. Today, I am more critical and creative in my thinking and feel more confident in navigating complex challenges with flexibility and openness. The experiences and insights I have gained throughout this PhD have given me the tools to continue evolving as an educator, always seeking new ways to connect theory with practice in meaningful ways. The importance of dialogue – whether with my supervisors, peers, or the teachers in my study – cannot be overstated. These exchanges forced me to examine my assumptions, push boundaries and engage with new perspectives. I have realised that beingcritical is not just about questioning ideas but engaging in collaborative inquiry to create deeper understanding. Likewise, creativity is about embracing uncertainty and finding innovative ways to approach real-life problems.

As I look to the future, I see limitless possibilities for applying these insights. I aim to continue

exploring how PBE and CCT can address pressing social and environmental challenges in education. My commitment is to ongoing reflection and dialogue, which will guide my work as I engage with new communities, schools and educational contexts. This journey has been transformative, not just in shaping my research but in showing me how education can be a powerful tool for personal and societal change. I am excited to continue evolving, embracing the unknown and driving educational innovations that foster CCT in future generations of students.

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APPENDICES

Appendix 1: Semi-structured interview protocol

THE SEMI-STRUCTURED INTERVIEW QUESTIONS

Introductory Statement: (Read aloud just before the commencement of each interview)

This interview with (State name of interviewee), Teacher of (School details), was conducted at (venue) on (date). This interview is recorded by Desiani Muliasari.

Thank you for willingly participating in the interview. The purpose of the interview is togather insights on your experiences and perceptions of implementing the Critical Pedagogy of Place (CPoP) and Critical and Creative Thinking (CCT) and to reflect onyour teaching practices for improvement. I assure you that your responses will be keptconfidential and used only for research purposes.

Part 1: Teachers' Perceptions of Implementing CPoP

A. Understanding of Critical and Creative Thinking

1. Can you describe your understanding of critical thinking in the context of yourteaching?
2. How do you define creative thinking in your classroom?
3. Do you think critical and creative thinking is important?
4. What is important to you as teachers in teaching critical and creative thinking?
5. In what ways do you incorporate critical and creative thinking into your lessons?

B. Understanding of Critical Pedagogy of Place (CPoP)

6. What does Critical Pedagogy of Place mean to you?
7. How did you first learn about CPoP?
8. Do you think making use of place is important?
9. How do you see the connection between CPoP and critical/creative thinking?

C. Experiences and Prior Knowledge

10. Can you share any previous experiences you have with environmental education?

11. How have your past experiences influenced your current teaching practices related toCPoP?
12. What prior knowledge did you have about critical pedagogy before implementingCPoP?

Part 2: Teachers' Intentions in Implementing CPoP

A. Motivations and Goals
1. What motivated you to implement CPoP in your teaching?
2. What goals do you hope to achieve through the implementation of CPoP?
3. How do you think CPoP aligns with your personal teaching philosophy?

B. Expected Outcomes for Students
4. What specific outcomes do you expect for your students as a result of implementingCPoP?
5. How do you think CPoP will impact your students' critical and creative thinking skills?
6. What changes do you hope to see in your students' attitudes towards theenvironment?

C. Community and Environmental Engagement
7. How do you intend to involve the local community in your CPoP activities?
8. What role do you see your students playing in addressing local environmentalissues?
9. How do you plan to integrate local environmental contexts into your teachingpractices?

Part 3: Understanding of CPoP in Classroom Teaching Practices

A. Implementation in Classroom Practices
1. How have you integrated CPoP into your classroom activities?
2. Can you provide examples of specific lessons or projects where you used CPoP?
3. How do you think CPoP has impacted your students' learning?

B. Reflection on Teaching and Learning Process
4. Reflecting on your recent teaching, what aspects of CPoP worked well in yourclassroom?
5. What challenges or obstacles did you encounter while implementing CPoP?
6. How have you addressed these challenges?

C. Verification and Observation Insights
7. During my observations, I noticed [specific observation]. Can you elaborate on this?
8. Were there any surprises or unexpected outcomes from implementing CPoP?
9. How do you plan to modify your strategies or approach in the next practices based onthese observations?

D. Students' Responses
10. How have your students responded to the activities and lessons based on CPoP?
11. Can you share any specific examples of student reactions or feedback?
12. In what ways do you think CPoP has influenced your students' attitudes towardslearning and the environment?

Appendix 2: Elements of implementing CPoP and CCT

Elements of Observation during the Classroom Activities
(D. A. Gruenewald, 2003; Patterson, 2001)

Attitude toward the behaviour		
1.	Activities are more fun and interesting	
2.	Students are more engaged and more likely to take ownership of learning	
3.	Activities align well with the curricula used by the educators	
4.	Activities are adaptable to varied learning styles	
5.	Activities promote cooperative and collaborative learning among students	
6.	Activities foster awareness of diversity	
7.	Activities are hands on	
8.	Activities model real life and daily problem-solving a. Ask the students to debate and argue for a particular point of view which may not be their own b. I request students to explain the reasoning behind their answers c. I ask students to work in small groups to come up with a joint solution to a problem or task d. I ask students to come up with an original solution to a problem or task e. I let students work on topics connected to their own interests f. I ask students to reformulate a problem or task in their own words	
9.	Activities identify what needs to be conserved	

10.	Activities identify what needs to be renewed	
11.	Activities identify what needs to be revitalized	
12.	Activities engage with local citizens	
13.	Activities engage with environmental resources	
14.	Activities contributes to the community	
15.	Activities create appreciation to the natural world	
16.	Activities are inexpensive to implement	
17.	Activities are easy to implement	
18.	Activities take extra time to implement	
19.	Activities lead to loss of control of the teaching and learning process	
20.	Activities mean less material can be covered	
21.	Activities use technology	
22.	Activities use kinds of modes	
Subjective norm (persons associated with implementation)		
23.	Students School Colleagues Community	
Perceived behavioural control (factors associated with implementation)		
24.	Additional funds or supplies Additional preparation time	
25.	Additional class time	
26.	Additional class activities	

Appendix 3: Reflection from the community sharing session

Reflection Notes from Community Sharing Sessions

Date: 16 July 2022	
Focus: Integrating CPoP to Foster CCT within the Merdeka Curriculum	
Category	**Details**
Key Discussion Points	**Initial Understanding of CPoP and CCT:** Teachers expressed varied levels of familiarity with CPoP and CCT. While most had a general understanding of CCT as part of the Merdeka Curriculum, they were less familiar with how CPoP could serve as a framework to promote CCT through local context and place-based education. The group discussion revealed that many teachers were already implementing project-based learning, which overlaps with CCT. However, they were excited to see how CPoP could help ground these projects more firmly in students' local communities, fostering a deeper connection between the curriculum and real-life issues. **Integration Challenges:** Some participants expressed concerns about balancing the demands of the new curriculum with the principles of CPoP. Ibu Yuna noted, "We are already trying to implement project-based learning, but integrating local issues and environmental awareness adds another layer to our planning. How can we fit this into our tight schedules?" **Need for Practical Examples:** Teachers requested more specific examples of how CPoP could be applied across different subjects. For instance, while CPoP naturally lends itself to environmental studies or social sciences, teachers of other subjects, such as mathematics, struggled to see the connection. Ibu Ika asked for examples of how to apply CPoP in mathematics, sparking a conversation about using local environmental data (e.g., non standard unit of measurement) to teach mathematical concepts.
Successes	**Collaborative Learning:** Teachers valued the opportunity to engage in focus group discussions, simulations, and demonstrations during the session. These methods helped them understand how CPoP principles could be applied to their teaching practices. For example, a simulation involving local environmental issues as classroom discussion starters was met with enthusiasm. Teachers noted that real-life examples from their local area made the learning more relatable and meaningful for students. Several participants found interactive tools like using Kahoot for quizzes on local environmental issues highly engaging, though some expressed concern about using technology in classrooms where students might lack devices.

Category	Details
	Positive Reception to CPoP Concepts: After demonstrating how CPoP could foster CCT, Ibu Euis remarked, “I never realised how much potential there is in using our local environment to encourage students to think critically. This approach is something I can see working well in my class.” This highlighted a shift in the teachers' mindset toward using local, place-based learning to engage students more deeply.
Challenges	**Limited Familiarity with CPoP:** While teachers grasped the basics of CPoP by the end of the session, some were unsure of how to translate theoretical knowledge into practice. Ibu Pina stated, “I understand the idea of connecting lessons to the local context, but I’m not sure how to implement it consistently in all my lessons, especially when the curriculum is already packed.” **Language Barriers with Materials:** Some participants faced challenges with materials that were originally in English, affecting their understanding of CPoP concepts. Ibu Lela mentioned, “I need more resources in Bahasa Indonesia because sometimes the English terms are hard to understand and implement.” This feedback highlighted the need for additional support through translated resources to ensure full engagement with the content. **Time Constraints and Integration into Merdeka Curriculum:** Teachers voiced concerns about integrating CPoP into the Merdeka Curriculum given the time constraints of the school year. Ibu Yuna shared, “With the new curriculum, there’s already so much to cover. Adding CPoP principles requires extra preparation time, and I’m worried I won’t have enough time to plan everything.”
Key Insights	**Importance of Local Context:** Teachers saw the value of CPoP in making learning more meaningful for students by connecting it to their local environment. Several noted that using local case studies and issues was a powerful way to develop CCT skills. Ibu Dewi shared, “When students learn about environmental issues happening in their own communities, it becomes more real to them. They start thinking about how they can make a difference, which is exactly what we want.” **Need for Continued Support:** Teachers emphasised the importance of ongoing support and follow-up workshops. Several expressed the need for continued collaboration to deepen their understanding of how to integrate CPoP with the Merdeka Curriculum. Ibu Mia suggested, “It would be great to have a few more workshops where we can try out some lesson plans together and see how we can refine them.” **Reflection on Pedagogical Practices:** Reflecting on their current teaching practices, many teachers realized

Category	Details
	they were already using elements of CPoP, especially in project-based learning and field trips. However, they felt that CCT was often an afterthought and expressed interest in planning lessons more intentionally to develop CCT through CPoP.
Next Steps	**Tailored Resources:** To address the language barrier and improve access to CPoP concepts, I plan to provide more translated resources and localized examples in future sessions. This will ensure that all teachers, regardless of English proficiency, can fully engage with the content. **Follow-Up session:** Based on the teachers' request for more examples and ongoing support, I will organise additional follow-up sessions focused on practical implementation. These workshops will include working together on lesson plans and providing further guidance on how to balance CPoP with the existing demands of the Merdeka Curriculum. **Collaborative Reflection:** Teachers will be encouraged to continue reflecting on their classroom practices and share their experiences in the next session. This reflection process will help them identify what works, what doesn't, and how they can continue refining their approach to integrating CPoP and CCT.

Appendix 4: Lesson Planning

LESSON PLAN OF VISUAL ARTGRADE 1 PRIMARY SCHOOL

GENERAL INFORMATION

A. MODULE INDENTIFICATION

Author : [redacted]
School. : [redacted]
Subject : **Visual Art**
Phase/Grade. : **A / 1 (Satu)**
Activity. : **Colours (Introduction to Natural Colouring)**

B. INITIAL COMPETENCIES

- Students are familiar with primary, secondary, and tertiary colours.
- Students are familiar with coloring tools (wet and dry colouring tools).

C. PANCASILA STUDENT PROFILE

- **Creativity:** Produces artwork.
- **Critical Thinking:** Reflects on the thinking process: asks questions, experiments.

D. MATERIAL AND RESOURCES

- Sufficient lighting for class activities
- Spacious enough to accommodate activities.

Learning Resources :

- Kementerian **Pendidikan, Kebudayaan, Riset, Dan Teknologi Republik Indonesia, 2021** Buku Panduan Guru Seni Rupa untuk SD Kelas I Penulis: Dewi Miranti Amri dan Rizki Raindriati.

Tools and materials :

- Plants that can produce various colors.
- Water
- Mortar/pestle or blender
- Brushes
- Drawing pad

E. TARGETTED STUDENTS

- Regular students

F. Learning Model

- Face to face learning model.

CORE COMPONENTS

A. LEARNING OBJECTIVES

Create

- Students can correctly name 5 types of plants/fruits/spices (natural materials) that can produce colour.
- Students can confidently explain the process of preparing plants to produce colour.
- Students can create artwork using natural dyes from plants/fruits..

B. MEANINGFUL UNDERSTANDING

- Creating a piece of artwork or design and planning and experimenting the use of colors.

C. INQUIRY QUESTIONS

- Can we color a picture without using tools like crayons, markers, and coloured pencils?
- What plants/fruits/spices can produce colour?
- How do we process plants into colour tools?

E. LEARNING ACTIVITIES

1. Opening Activities

- The teacher opens the lesson with greetings followed by a joint prayer.
- The teacher introduces the lesson by singing the song “Kebunku” (My Garden).
- The teacher checks students’ attendance.
- The teacher and students engage in a Q&A session related to the previous material.
- The teacher explains the objectives and activities of the learning session.

2. Whilst Activities

- Students are organized into groups.
- The teacher and students discuss the question: “If we don't have colouring tools like coloured pencils, markers, or crayons, can we still colour a picture?”
- Each group provides their answers or opinions regarding the previous question.
- The teacher shows a presentation slide about plants that can produce colour.
- After that, the students take out the fruits and vegetables/leaves that they have pre-cut at home.
- Each group grinds the pieces of fruit/vegetables/leaves/spices that they brought.
- Each group checks the colours produced from the natural materials in their group.
- Each group experiments by mixing colours they have or by asking for different colours from other groups.
- Each group discusses the colours they have produced through the colour-mixing experiment.
- The students begin making pictures using the natural colouring tools.
- The teacher walks around to check each group.

3. Closing Activities

- The teacher instructs the students to clean up their group’s table.
- The teacher takes pictures of each group's work, and these pictures are shared with the other groups.
- Students give appreciation in the form of praise and comments on the pictures they receive from other groups.
- The students review the benefit of using natural dye compare to synthetic dye
- The learning session is completed.

F. ASESMENT

Assessment:

1. Attitude Assessment (Collaboration, Independence, and Responsibility).
2. Knowledge Assessment.
3. Skills Assessment (Colour mixing and drawing).

Assessment Rubric

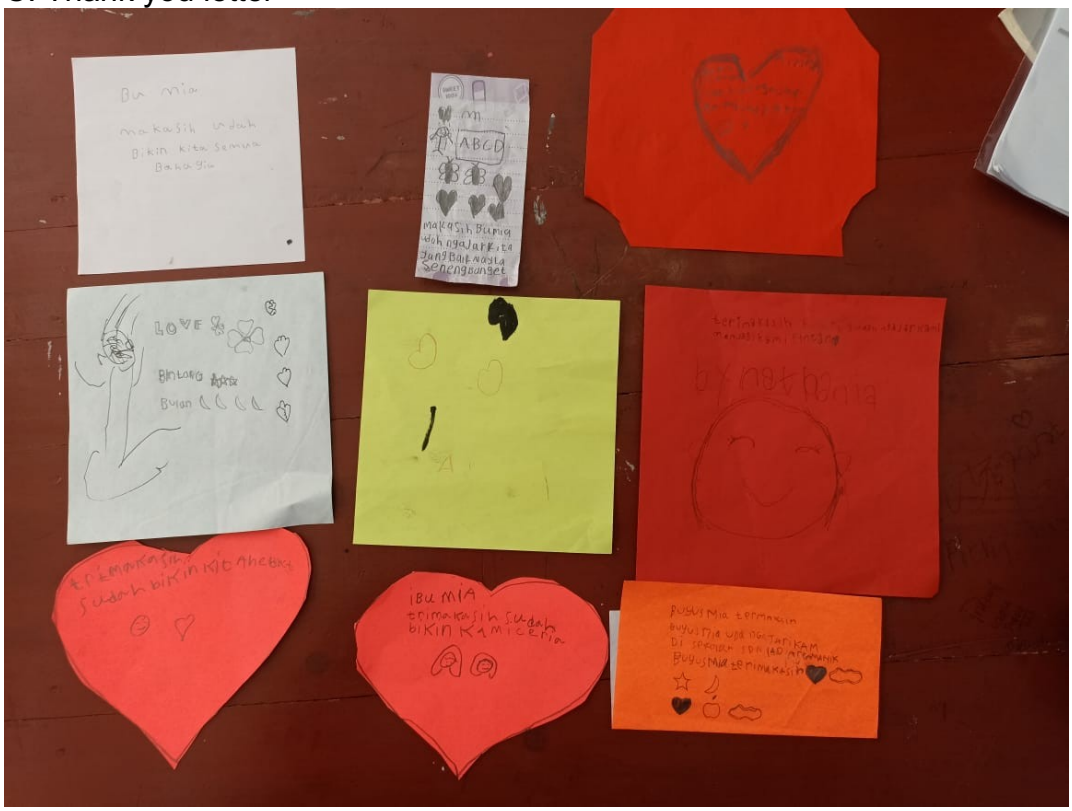
Criteria	SCORE 1	SCORE 2	SCORE 3	Notes
Asking Questions	Rarely or never asks questions without direction and guidance.	Asks questions relevant to the topic and, with assistance, explores deeper.	Asks questions that demonstrate deep understanding and high relevance to the topic.	Assesses students' ability to inquire about sources of natural coloring and their understanding of the environment.
Observational Skills	Uses guidance to observe or describe the environment and community.	Observes general information and provides basic descriptions with some detail.	Observes in detail and provides unique insights related to the environment and community.	Focuses on students' ability to observe and describe plants and natural color sources.
Creative Expression	Needs assistance to express ideas creatively.	Demonstrates creativity through appropriate forms to express ideas.	Uses various forms of creative expression to engage others and communicate understanding and ideas in an appealing way.	Assesses students' creativity in using natural colors for artwork and expressing their ideas.
Problem Solving	Offers solutions with guidance.	Offers practical solutions for challenges during the activity.	Produces innovative solutions independently.	Assesses how students solve problems, such as extracting color or mixing colors from natural materials.
Collaboration/Teamwork	Starts building collaboration with peers and needs guidance.	Collaborates with peers, sharing ideas and tasks.	Actively participates, contributing ideas in collaboration with peers, and helps the group achieve its goals.	Assesses students' ability to work in groups, especially in preparing and using natural materials.
Neatness and Readiness	Does not prepare tools and materials well and lacks organization in desk setup.	Prepares tools and materials well but not fully organized.	Prepares tools and materials well, is neat, and uses an apron independently.	Focuses on students' neatness in preparing and using natural coloring tools.
Responsibility for Cleanliness	Neglects cleanliness, needs help from the teacher or peers.	Still needs guidance from the teacher to clean the desk and work area.	Cleans the desk and work area independently without teacher guidance.	Assesses students' responsibility for keeping the work area clean after using natural coloring materials.

Appendix 5: Student's work samples

a. Natural Dye Project

b. Recycle Bin Project

C. Thank you letter



Appendix 6: Ethics

17 June 2021

HUMAN ETHICS LOW RISK PANEL

APPROVAL NOTICE

Dear Mrs Desiani Muliasari,

The below proposed project has been **approved** on the basis of the information contained in the application and its attachments.

Project No:	4094
Project Title:	Critical Pedagogy of Place Approach to Improve Critical and Creative Thinking: A Study of Primary School Context in Indonesia
Primary Researcher:	Mrs Desiani Muliasari
Approval Date:	17/06/2021
Expiry Date:	29/02/2024

Please note: *Due to the current COVID-19 situation, researchers are strongly advised to develop a research design that aligns with the University's COVID-19 research protocol involving human studies. Where possible, avoid face-to-face testing and consider rescheduling face-to-face testing or undertaking alternative distance/online data or interview collection means. For further information, please go to https://staff.flinders.edu.au/coronavirus-information/research-updates.*

RESPONSIBILITIES OF RESEARCHERS AND SUPERVISORS

1. **Participant Documentation**

   Please note that it is the responsibility of researchers and supervisors, in the case of student projects, to ensure that:

   - all participant documents are checked for spelling, grammatical, numbering and formatting errors. The Committee does not accept any responsibility for the above mentioned errors.
   - the Flinders University logo is included on all participant documentation (e.g., letters of Introduction, information Sheets, consent forms, debriefing information and questionnaires – with the exception of purchased research tools) and the current Flinders University letterhead is included in the header of all letters of introduction. The Flinders University international logo/letterhead should be used and documentation should contain international dialing codes for all telephone and fax numbers listed for all research to be conducted overseas.

2. **Annual Progress / Final Reports**

   In order to comply with the monitoring requirements of the *National Statement on Ethical Conduct in Human Research 2007 (updated 2018)* an annual progress report must be submitted each year on the approval anniversary date for the duration of the ethics approval using the HREC Annual/Final Report Form available online via the ResearchNow Ethics & Biosafety system.

   Please note that no data collection can be undertaken after the ethics approval expiry date listed at the top of this notice. If data is collected after expiry, it will not be covered in terms of ethics. It is the responsibility of the researcher to ensure that annual progress reports are submitted on time; and that no data is collected after ethics has expired.

   If the project is completed *before* ethics approval has expired please ensure a final report is submitted immediately. If ethics approval for your project expires please either submit (1) a final report; or (2) an extension of time request (using the HREC Modification Form).

   For student projects, the Low Risk Panel recommends that current ethics approval is maintained until a student's thesis has been submitted, assessed and finalised. This is to protect the student in the event that reviewers recommend that additional data be collected from participants.

3. **Modifications to Project**

   Modifications to the project must not proceed until approval has been obtained from the Ethics Committee. Such proposed changes /

modifications include:

- change of project title;
- change to research team (e.g., additions, removals, researchers and supervisors)
- changes to research objectives;
- changes to research protocol;
- changes to participant recruitment methods;
- changes / additions to source(s) of participants;
- changes of procedures used to seek informed consent;
- changes to reimbursements provided to participants;
- changes to information / documents to be given to potential participants;
- changes to research tools (e.g., survey, interview questions, focus group questions etc);
- extensions of time (i.e. to extend the period of ethics approval past current expiry date).

To notify the Committee of any proposed modifications to the project please submit a Modification Request Form available online via the ResearchNow Ethics & Biosafety system. Please note that extension of time requests should be submitted prior to the Ethics Approval Expiry Date listed on this notice.

4. Adverse Events and/or Complaints

Researchers should advise the Executive Officer of the Ethics Committee on 08 8201-3116 or human.researchethics@flinders.edu.au immediately if:

- any complaints regarding the research are received;
- a serious or unexpected adverse event occurs that effects participants;
- an unforeseen event occurs that may affect the ethical acceptability of the project.

Yours sincerely,

Hendryk Flaegel

on behalf of

Human Ethics Low Risk Panel
Research Development and Support
human.researchethics@flinders.edu.au
P: (+61-8) 8201 2543

Flinders University
Sturt Road, Bedford Park, South Australia, 5042
GPO Box 2100, Adelaide, South Australia, 5001

http://www.flinders.edu.au/research/researcher-support/ebi/human-ethics/human-ethics_home.cfm

ResearchNow
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Appendix 7: Participant information sheet and consent form

Flinders UNIVERSITY
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PARTICIPANT INFORMATION SHEET AND CONSENT FORM

Title:
Critical Pedagogy of Place Approach to Improve Critical and Creative Thinking: A Study of Primary School Context in Indonesia

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Flinders University
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Description of the study
This project will explore place-based pedagogy as a means of enlisting teachers and students in the first-hand experiences of their Indonesian social, cultural, and environmental context. This research on the critical pedagogy of place approach will enable Indonesian students to explore, think about, and learn about issues in their communities with the aim of engaging them in critical and creative inquiry-based skills that they can apply in further education and in future careers, as global citizens. This project is supported by Flinders University, College of Education, Psychology and Social Work.

Purpose of the study

This project aims to provide a theoretical and contextual implementation of critical pedagogy of place (CPoP) in the 21st century primary education curriculum in the Indonesian context.

Benefits of the study

Your involvement during class activities will help to contribute to the knowledge set of critical and creative thinking in primary education as well as to provide suggestions to organizations on how to design and implement CPoP practices to gain advantages for students and learning system. Thus, it will contribute to the primary education field with both theoretical implications and practical applications

Participant involvement and potential risks

If you agree to participate in the research study, you will be asked to:

- be interviewed and will be audio recorded.
  The interview will take place based on the time agreement between you and researcher.
- be observed during class activities and will be audio recorded and field noted.
  The observation will take during your class activities when the teacher implements CPoP.
- have a focus group discussion with other participants to share ideas and experiences and will be observed, audio recorded and field noted.
  The focus group will also take place based on time agreement between participants and researcher

If you are uncomfortable at any time during the interview, focus group and observation, it will be discontinued and only recommenced if you wish.
You will be referred to by a pseudonym.

The researcher does not expect the questions or activities to cause any harm or discomfort to you. However, if you experience feelings of distress as a result of participation in this study, please let the researcher know immediately. You can also contact your line manager or the school counselling section.

Withdrawal Rights

You may, without any penalty, decline to take part in this research study. If you decide to take part and later change your mind, you may, without any penalty, withdraw at any time without providing an explanation. To withdraw, please contact the Chief Investigator or you may just refuse to answer any questions / leave discussions / not participate in implementation at any time. Any data collected up to the point of your withdrawal will be securely destroyed.

Data recorded during dialogue interview and observation may not be able to be destroyed. However, the data will not be used in this research study without your explicit consent.

Confidentiality and Privacy

Only researchers listed on this form have access to the individual information provided by you. Privacy and confidentiality will be assured at all times. The research outcomes may be presented at

conferences, written up for publication or used for other research purposes as described in this information form. However, the privacy and confidentiality of individuals will be protected at all times. You will not be named, and your individual information will not be identifiable in any research products without your explicit consent.

No data, including identifiable, non-identifiable and de-identified datasets, will be shared or used in future research projects without your explicit consent.

Data Storage
The information collected may be stored securely on a password protected computer and/or Flinders University server throughout the study. Any identifiable data will be de-identified for data storage purposes unless indicated otherwise. All data will be securely transferred to and stored at Flinders University for at least five years after publication of the results. Following the required data storage period, all data will be securely destroyed according to university protocols.

Recognition of Contribution / Time / Travel costs
If you would like to participate, in recognition of your contribution and participation time, you will be provided with an IDR 300,000 internet data voucher. This voucher will be provided to you face-to-face on completion of the project.

How will I receive feedback?
During the project, the feedback will be provided as a reflection of the class activities implementation. On project completion, a short summary of the outcomes will be provided to all participants via email or published on Flinders University's website.

Ethics Committee Approval
The project has been approved by Flinders University's Human Research Ethics Committee (Project ID 4094)

Queries and Concerns
Queries or concerns regarding the research can be directed to the research team. If you have any complaints or reservations about the ethical conduct of this study, you may contact the Flinders University's Research Ethics & Compliance Office team via telephone +61 8 8201 3116 or email human.researchethics@flinders.edu.au.

Thank you for taking the time to read this information sheet which is yours to keep. If you accept my invitation to be involved, please sign the enclosed Consent Form and you may send it to my email at muli0019@flinders.edu.au.

CONSENT FORM

Consent Statement

☐ I have read and understood the information about the research, and I understand I am being asked to provide informed consent to participate in this research study. I understand that I can contact the research team if I have further questions about this research study.

☐ I am not aware of any condition that would prevent my participation, and I agree to participate in this project.

☐ I understand that I am free to withdraw at any time during the study.

☐ I understand that I can contact Flinders University's Research Ethics & Compliance Office if I have any complaints or reservations about the ethical conduct of this study.

☐ I understand that my involvement is confidential, and that the information collected may be published. I understand that I will not be identified in any research products.

I further consent to:

☐ participating in an interview
☐ participating in observation
☐ Participating in focus group discussion
☐ having my information audio recorded
☐ sharing my de-identified data with other researchers in the future.

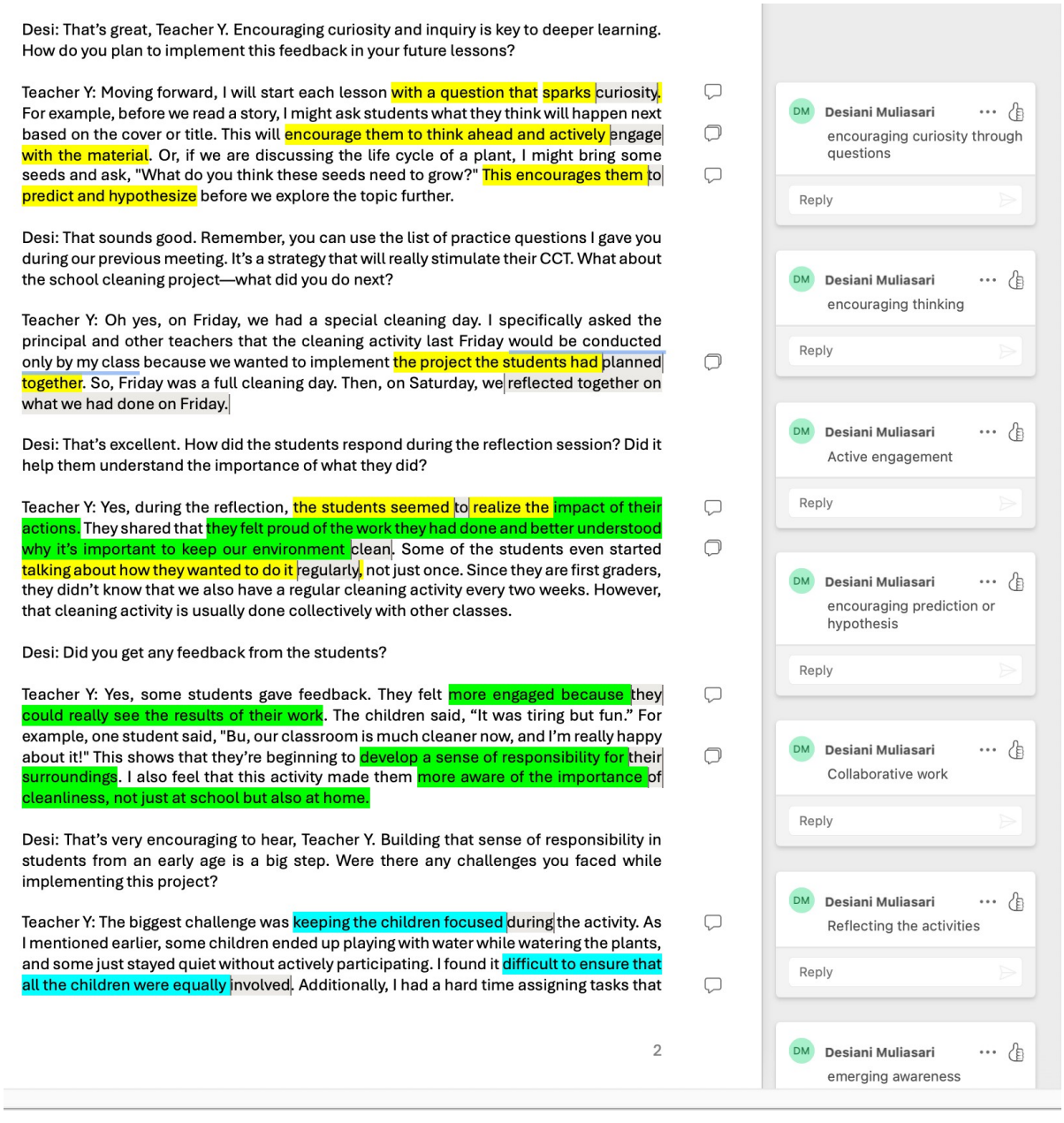
Signed:

Name:

Date:

Appendix 8: The sample of data analysis

- **a.Coding**



Desi: That's great, Teacher Y. Encouraging curiosity and inquiry is key to deeper learning. How do you plan to implement this feedback in your future lessons?

Teacher Y: Moving forward, I will start each lesson with a question that sparks curiosity. For example, before we read a story, I might ask students what they think will happen next based on the cover or title. This will encourage them to think ahead and actively engage with the material. Or, if we are discussing the life cycle of a plant, I might bring some seeds and ask, "What do you think these seeds need to grow?" This encourages them to predict and hypothesize before we explore the topic further.

Desi: That sounds good. Remember, you can use the list of practice questions I gave you during our previous meeting. It's a strategy that will really stimulate their CCT. What about the school cleaning project—what did you do next?

Teacher Y: Oh yes, on Friday, we had a special cleaning day. I specifically asked the principal and other teachers that the cleaning activity last Friday would be conducted only by my class because we wanted to implement the project the students had planned together. So, Friday was a full cleaning day. Then, on Saturday, we reflected together on what we had done on Friday.

Desi: That's excellent. How did the students respond during the reflection session? Did it help them understand the importance of what they did?

Teacher Y: Yes, during the reflection, the students seemed to realize the impact of their actions. They shared that they felt proud of the work they had done and better understood why it's important to keep our environment clean. Some of the students even started talking about how they wanted to do it regularly, not just once. Since they are first graders, they didn't know that we also have a regular cleaning activity every two weeks. However, that cleaning activity is usually done collectively with other classes.

Desi: Did you get any feedback from the students?

Teacher Y: Yes, some students gave feedback. They felt more engaged because they could really see the results of their work. The children said, "It was tiring but fun." For example, one student said, "Bu, our classroom is much cleaner now, and I'm really happy about it!" This shows that they're beginning to develop a sense of responsibility for their surroundings. I also feel that this activity made them more aware of the importance of cleanliness, not just at school but also at home.

Desi: That's very encouraging to hear, Teacher Y. Building that sense of responsibility in students from an early age is a big step. Were there any challenges you faced while implementing this project?

Teacher Y: The biggest challenge was keeping the children focused during the activity. As I mentioned earlier, some children ended up playing with water while watering the plants, and some just stayed quiet without actively participating. I found it difficult to ensure that all the children were equally involved. Additionally, I had a hard time assigning tasks that

2

DM Desiani Muliasari
encouraging curiosity through questions
Reply

DM Desiani Muliasari
encouraging thinking
Reply

DM Desiani Muliasari
Active engagement
Reply

DM Desiani Muliasari
encouraging prediction or hypothesis
Reply

DM Desiani Muliasari
Collaborative work
Reply

DM Desiani Muliasari
Reflecting the activities
Reply

DM Desiani Muliasari
emerging awareness

c. Code book/categorisation

					Challenges in implementing CPoP			CPoP to foster CCT	
			Curriculum integration and pedagogical shifts	Student-centered learning	Time management and practical challenges	Curriculum and assessment challenges	Resource limitation	CPoP	Fo
Quote	**Code**		how teachers are integrating the CPoP model into the existing 2013 and Merdeka curricula. It focuses on how CPoP aligns with curriculum requirements, IPBL and CCT. Explores the pedagogical changes and flexibility.	CPoP fosters student autonomy, critical thinking, and active participation. covers techniques like group work, play-based learning, and storytelling that support this shift.	covers the various challenges teachers face in implementing CPoP, including time management, curriculum demands, resource limitations, and assessment of CCT. addresses practical constraints in balancing CPoP with curriculum objectives, community expectations, and limited resources.			CPoP foster CCT students through hands-on, place-ba engaging students with real-life social and environ community, CPoP helps develop their CCT and pr	
PoP, focusing on our living environment with all its issues, becomes one way for us to understand a more realistic learning context and contribute to our own	Insight into curriculum integration		Insight into curriculum integration	Active student engagement, Anas facilitator	Time limitation and demands	Challenge: Balancing CPoP with curriculum objectives	Limited resources and cost-effectiveness concerns	CPoP connects real life and environment to students' learning	Enhancing C connection t
ulum objectives without making the lessons being forced.	Challenge: Balancing CPoP with curriculum objectives	Challenge	Smooth curriculum transition	Student curiosity and exploration	Time constraints for deep knowledge	Curriculum content demands, time constraints		Learning relevant to students' lives and environment	Critical awar environment
As you said, if possible, I should just be a shadow and let the students take control of the learning so they are more active and also willing to take risks.	Active student engagement, teacher as facilitator		Curriculum support CPoP	Student autonomy in learning (ownership)	Efficiency of using group work	Community expectation		Project-based learning with local wisdom (Angklung)	Critical and through colli
isting CPoP to integrate with the curriculum pushes me to think hard and find innovative ways to involve my students more.	Creativity and flexibility in teaching		Curriculum with PBL and CCT	Shift from passive to active learning	Time management	Challenges with CCT assessment		Key points of CPoP	Storytelling for CCT
ne an overview or examples of activities that colleagues have presented and tried to simulate.	Practical application of CPoP		K13 themes support Merdeka lesson planning	Student-centered learning, CPoP flexibility	Location and time challenges	Doubts about CCT depth of knowledge in students		Knowledge application	Observing s
he 2013 curriculum, especially with limited time.	Curriculum content demands, time constraints	Challenge	Explicit focus on CCT in Merdeka Curriculum	Time required for exploration	Dense material as challenges	Lack of Merdeka curriculum socialization		Sharing fun learning in TPL	Critical think spaces
ilfill as a first-grade teacher.	Time limitation and demands	Challenge	Implementation across classes	Play-based learning to maintain interest				Fun environmental learning	
ents and some teachers at my school.	Community expectation		Smooth curriculum transition	Student voice in environmental learning/Storytelling and creative drawing for CCT					
es of what things they would like to observe or explore.	Shift from passive to active learning		Knowledge application	Exploring local community					
anything in their surroundings that makes them curious to explore.	Student curiosity and exploration			Knowledge application of CCT					
houghts. By doing this, they become more involved and take ownership of their learning, making the educational experience more meaningful for the children.	Student autonomy in learning (ownership)			Holistic learning					
with the curriculum's assessment criteria is a challenge for me.	Challenges with CCT assessment	Challenge		Observing surrounding					
and more natural. I thought it would be really hard, but it turns out to be almost the same as K13.	Smooth curriculum transition			Critical thinking through everyday spaces					
				Engaging in many activities					
	Feelings about new curriculum								

C. Generating themes

	Coding	Phrase or Explanation	Teacher's Intentions and Objectives	Encouraging Thinking Processes	Learning Methods and Approaches	Addressing Teaching Challenges	Social and Ethical Development
	Teacher's Objective	"My goal is to encourage students to be more active and participative..."					
	Difficult to Teach	"Nowadays, it's difficult to teach children purely through textual methods."	**Teacher's Objective**: Statements explicitly describing the teacher's goals and intentions.	**Make Them Think**: Encouraging students to think critically and analyze situations deeply.	**Hands-On Learning**: Using practical, experiential activities to facilitate learning.	**Difficult to Teach**: Recognizing challenges and difficulties in teaching specific content or engaging students.	**Teach Values**: Instilling social, ethical, and moral values in students.
d participative fficult to teach em with their nment can be a t as a source of	Make Them Think	"But if we engage them with their environment and make them think, 'Oh, the surrounding environment can be a learning process, not just a place to play,' they will start seeing it as a source of knowledge."	**Promote Cultural Understanding**: Aiming to increase students' awareness and appreciation of cultural values and heritage.	**Make Them Think/Problem Solving**: Promoting students' ability to identify problems and develop solutions.	**Make Lessons Relatable**: Connecting learning material to students' lives and real-world experiences.	**Stereotyping**: Identifying and addressing preconceived notions or biases within the teaching process or student perceptions.	**Social Issues**: Addressing and discussing societal issues within the learning context.
to have instant us about, it's nt. But if we ing of it as a to see it as a	Stereotyping	"The children today are millennials, and they prefer to have instant access."	**Encourage Collaboration**: Motivating students to work together and develop teamwork skills.	**Make Them Think and Contribute**: Motivating students to reflect on their role and actively contribute ideas or actions.	**Provide Student Support**: Offering support structures to help students succeed in their learning activities.	**Address Real-Life Challenges**: Connecting learning to real-world problems and challenges students may face.	
mething and vely participate	Engage Their Interest	"When they want to explore something they are curious about, it's easier to illustrate it when they participate in their environment."	**Align with Curriculum**: Ensuring that the teaching approach aligns with educational standards and curriculum requirements.	**Make Them Think and Reflect**: Encouraging students to engage in self-reflection about their learning and experiences.			
	Engage Their Curiosity	"But if we engage them in their environment and support them in thinking of it as a learning opportunity rather than just a play area, they will start to see it as a source of knowledge as well."	**Involve Community Collaboration**: Seeking to work with community members and organizations to enhance learning experiences.	**Make Them Reflect**: Prompting students to reflect on their thoughts, actions, or learning process.			
I want them to ortance of ot just about standing how nd the natural who are more e in."	Teacher's Objective	"I want them to notice the details of their environment, understand the importance of preserving it, and feel a sense of responsibility towards it."	**Involve in Community Action/Activities**: Engaging students in activities that involve the community, like local projects or initiatives.	**Encourage Questioning**: Promoting inquiry and encouraging students to ask questions about the world around them.			
	Make Them Think	"I hope this awareness helps them grow into individuals who are more thoughtful and caring about the environment they live in."		**Encourage Curiosity**: Stimulating a natural curiosity in students to explore and learn more.			
s work together help students ue as part of a omething they a that learning	Teacher's Objective	"This activity will help students see the diversity in their classroom and how each family is unique as part of a larger community."		**Encourage Creative Solutions**: Inspiring students to come up with innovative and creative solutions to challenges.			
	Make Them Think	"We'll also encourage them to write or draw something they learned from their friends' stories, which helps reinforce the idea that learning from each other's experiences is valuable."		**Engage Their Interest**: Capturing and maintaining students' interest in the subject matter to facilitate deeper thinking.			
and lessons		"I plan to use local stories and folklore to teach values and lessons relevant to		**Engage Their Curiosity**: Actively engaging students' curiosity through interesting and thought-provoking			