

A Critical Exploration of Primary School Teacher Education in
Cambodia: Perspectives from In-Service Teachers, Pre-Service
Teachers, and Teacher Trainers

カンボジアにおける初等教師教育の批判的考察
—現職教員、教職課程履修者、教師教育者の視点から—

A Dissertation Presented to
the Graduate School of Arts and Sciences
International Christian University
for the Degree of Doctor of Philosophy

国際基督教大学 大学院
アーツ・サイエンス研究科提出博士論文

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Abstract

Teacher education, including pre-service teacher education and continuous professional development (CPD), exerts a substantial influence on the overall quality of education students receive. In particular, pre-service teacher education lays the foundational knowledge, skills, and attitudes necessary for prospective teachers to succeed in the classroom. On the other hand, CPD ensures that in-service teachers remain up-to-date regarding their knowledge, skills, and teaching practices, which in turn enhance student learning outcomes.

The study reported in this doctoral dissertation critically explored primary school teacher education in Cambodia, focusing on both pre-service teacher education and in-service teacher education/CPD. In particular, the study sought to understand (1) how the 12+2 teacher training program in Cambodia is perceived to build pre-service primary school teachers' knowledge base for teaching, (2) what constitutes effective CPD for in-service primary school teachers in Cambodia, considering their professional context of constrained resources and support, and (3) challenges hindering the provision of primary school teacher education in Cambodia, including pre-service teacher education and in-service teacher education/CPD.

In view of the recent implementation of several key policies, frameworks, action plans, and programs, relatively little is known about how the 12+2 teacher training program in Cambodia is perceived to build pre-service primary school teachers' knowledge base for teaching. As regards CPD for teachers, growing conceptions of effective CPD have been found in the literature. However, CPD for teachers is acknowledged to be context-sensitive, suggesting that existing conceptions of effective CPD might not adequately capture or cater to the unique context of Cambodia, which is characterized by its distinct sociocultural, political, economic, and historical dynamics. There is also a limited understanding of the challenges that continue to hinder the provision of pre-service primary school teacher education and CPD for in-service primary school teachers in Cambodia following the implementation of those policies, frameworks, action plans, and programs in

recent years. Therefore, this study aims to fill these knowledge voids by providing the latest insights into primary school teacher education in Cambodia (both pre-service teacher education and in-service teacher education/CPD) – a domain that is relatively underdeveloped and underrepresented in the international literature. Moreover, the study aims to offer research-based recommendations to enhance primary school teacher education in Cambodia in particular and extract any theoretical insights that could be valuable to the broader context.

With a complete emphasis on addressing the research questions to achieve the overall research aims, this study was designed as a qualitative case study, informed by the epistemological position of interpretivism. Within this qualitative case study, primary school teacher education in Cambodia was regarded as the overarching case, with pre-service teacher education and in-service teacher education/CPD as two embedded units of analysis and different geographical areas as additional layers or contexts within which the embedded units are situated. The study deliberately selected 27 participants comprising 12 in-service teachers, eight pre-service teachers, and seven teacher trainers to take part in semi-structured in-depth interviews – the primary data collection method of the study. The pre-service teachers and teacher trainers were chosen from two teacher training institutions, while in-service teachers were recruited from a number of public primary schools in a province and the capital city, Phnom Penh. The study also collected various documents, including the training curriculum, government policies and reports, action plans, strategic plans, frameworks, NGO reports, and relevant studies, among others. Although these documents were not analyzed to generate new findings, they played an important role in contextualizing and corroborating the findings obtained from the interviews. The data analysis of the study primarily followed a linear, hierarchical approach suggested by Creswell (2014) and facilitated by the latest NVivo, a commonly used software application for analyzing qualitative data. Grossman's (1990) model of teacher knowledge and the principles of adult learning theory (andragogy) and situated learning theory served as the theoretical frameworks for the study.

The study's findings indicated that the 12+2 teacher training program in Cambodia placed little emphasis on developing the content knowledge of pre-service primary

school teachers. Attributed to this lack of focus was the prevalent perception that prior to attending the program, pre-service teachers already had basic content knowledge to understand and teach content or material at the primary school level. Such a perception that merely possessing basic content knowledge acquired through 12 years of general education is adequate for primary school teaching implies a misconception that strong content knowledge is not considered necessary for teaching foundational knowledge and skills at the primary school level. This misconception underestimates the cognitive demands and complexity of foundational education at the primary school level, which lays the groundwork upon which further education is built. It is, therefore, crucial to rectify the misconception among stakeholders to prevent it from becoming further entrenched and normalized. Apart from that, the cultivation of other knowledge domains through the program, such as general pedagogical knowledge, pedagogical content knowledge (PCK), and knowledge of context, was perceived in a positive light in several important areas despite some limitations in (1) exposure to authentic classroom experiences, (2) the development of digital teaching competencies, and (3) communication about the purpose of teaching specific subjects. However, the lack of focus on content knowledge development could potentially undermine its dynamic interplay with other knowledge domains, particularly PCK.

As regards effective CPD for in-service primary school teachers in the context of constrained resources and support, the study identified several characteristics that revolved around approaches to CPD, relevance to teachers, and assessment and support. Most of the identified characteristics fall within the fundamental assumptions or principles of the two theories that the study engaged, suggesting that incorporating the two theories provides a more comprehensive and balanced framework for designing an effective CPD program for teachers. Furthermore, the study pointed out that in the context where teachers struggle to make ends meet due to low salaries and the need to engage in moonlighting activities, an incentivized system that links teachers' CPD engagement to both financial and non-financial benefits was considered crucial to stimulate active participation and acknowledge teachers' dedication to CPD.

The study also pinpointed a number of potential challenges that could impede the effective provision of primary school teacher education in Cambodia, including pre-service teacher education and in-service teacher education/CPD. In particular, the challenges to pre-service teacher education were primarily concerned with (1) curriculum and implementation, (2) teaching and learning resources, (3) quality and capacity of the stakeholders, and (4) other issues pertaining to teacher trainers' motivation and commitment and teaching approaches. As regards in-service teacher education/CPD, the challenges included (1) the lack of CPD opportunities and support, (2) ineffective CPD approaches, (3) irrelevance to teachers in terms of their needs and CPD content, (4) teachers' own reluctance to CPD engagement due to various factors, and (5) other issues such as ineffective utilization of the monthly Thursday Technical Meeting (TTM), lack of resources for CPD implementation, and lack of evaluation and follow-up system.

Based on its findings and discussion, the study proposes a model consisting of cyclical steps to manage the identified misconception about content knowledge needed for primary school teaching. The model aims to cultivate an accurate understanding among stakeholders, thereby shifting a reorientation towards enhanced focus on content knowledge development within both pre-service teacher education and CPD programs. The study also puts forward a model to conceptualize effective CPD for in-service primary school teachers in the context where resources and support are limited. The model focuses primarily on the theoretical intersection of adult learning theory (andragogy) and situated learning theory, which forms the bedrock of an effective CPD program. In conjunction with this theoretical intersection, the model underscores the role of a well-defined system that serves to evaluate, follow up on, and support teachers' CPD, as well as to balance teachers' intrinsic and extrinsic motivation. Moreover, the study discusses its practical contributions and offers recommendations to further enhance primary school teacher education in Cambodia, including pre-service teacher education and in-service teacher education/CPD. The study also outlines its limitations and concludes by offering several suggestions for areas of future research to build upon the findings presented.

Declaration

I hereby declare that this doctoral dissertation is the result of my own independent and original work except where otherwise stated. It has not been previously accepted, in whole or in part, for any degree, and it is not being concurrently submitted in candidacy for any degree at this university or any other institution.

Dedication

I dedicate this doctoral dissertation to my parents, whose selfless devotion and unwavering support enabled me to attain the education that has culminated in this achievement. Their sacrifices have been instrumental in shaping me into the person I am today, and I am forever grateful for their unconditional love.

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List of Abbreviations

ADB	Asian Development Bank
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
CoP	Community of Practice
CPD	Continuous/Continuing Professional Development
DTMT	District Team for Monitoring and Training
EFL	English as a Foreign Language
E-TEC	Establishment of Teacher Education College
GPE	Global Partnership for Education
ICT	Information and Communication Technology
ILO	International Labour Organization
INSET	In-Service Education and Training
IST	In-Service Teacher
JICA	Japan International Cooperation Agency
MoEYS	Ministry of Education, Youth and Sport
NCTQ	National Council on Teacher Quality
NGO	Non-Governmental Organization
OECD	Organisation for Economic Cooperation and Development
PCK	Pedagogical Content Knowledge
PLC	Professional Learning Community
PS	Public School
PST	Pre-Service Teacher
PTTC	Provincial Teacher Training Center
RGC	Royal Government of Cambodia
SABER	Systems Approach for Better Education Results
SBM	School-Based Management
STEPCam	Strengthening Teacher Education Programme in Cambodia
TALIS	Teaching and Learning International Survey
TEC	Teacher Education College
ToT	Trainers of Trainers
TPACK	Technological Pedagogical Content Knowledge
TPAP	Teacher Policy Action Plan

TT	Teacher Trainer
TTC	Teacher Training Center
TTM	Thursday Technical Meeting
UNICEF	United Nations Children's Fund
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development

CHAPTER 1: Introduction

1.1 Background of the Study

Cambodia underwent a devastating period in its history during the Khmer Rouge regime. This brutal regime ruled the country from 1975 to 1979, obliterated almost all educational infrastructure, and caused deaths to as many as two million innocent Cambodian people, including nearly a generation of political leaders, intellectuals, professionals, and religious figures (Becker, 1998; Tyner, 2017). As part of the national rebuilding process, the restoration of the education sector in Cambodia began following the collapse of the Khmer Rouge regime in 1979, even though political instability continued until the late 1990s (Hang, 2018). However, the endeavor to reconstruct the country's education system from scratch has encountered a plethora of critical challenges that remain to be addressed.

Teacher training/education¹ is no exception. With enormous losses of erudite people during the Khmer Rouge regime, the Royal Government of Cambodia (RGC), through its Ministry of Education, Youth and Sport (MoEYS), was compelled to recruit teachers with minimal qualifications and skills to serve in the reconstituted teaching workforce (No & Heng, 2017). During the early 1980s, the duration required to complete the state-run pre-service teacher training could be as short as several days to several weeks and/or months, depending on the teaching level and geographical location (Hang, 2018; No & Heng, 2017). With the

¹ In this dissertation, teacher training/education includes both pre-service and in-service.

increasing availability of human, financial, and technical resources, the length of pre-service teacher training at all educational levels has consistently been extended as the overall education system has become more complex and demanding in a competitive and rapidly evolving world. As for the pre-service primary school teacher training, the training formula has evolved significantly from time to time (see Table 1.1).

Table 1.1

The Evolution of Pre-Service Primary School Teacher Training in Cambodia

Years	Training Formula
1980-1982	Short training
1982-1987	7+1* 3+1 (For disadvantaged areas)
1987-1991	8+1 5+3 (For disadvantaged areas)
1991-1993	8+2
1993-1995	11+2 8+2 (For disadvantaged areas)
1995-1997	11+2 Bachelor's+1 9+2 (For disadvantaged areas)
1997-1998	12+2 Bachelor's+1 9+2 (For disadvantaged areas)
1998-2015	12+2 9+2 (For disadvantaged areas)
2015-2019	12+2
2019-Present	12+2 12+4 (Only at two newly established Teacher Education Colleges)

Source: Adapted from No and Sok (2022, p. 35)

* 7+1 means that a candidate with 7 years of schooling must undertake 1 year of pre-service teacher training to become a primary school teacher.

As depicted in Table 1.1, the entry requirement and duration of pre-service teacher

training have continuously increased. Presently, two distinct training formulas are being used to train pre-service primary school teachers: the 12+2 and 12+4. This means that entrants to the pre-service teacher training programs must have completed at least 12 years of schooling and undertake two or four years of training to qualify as primary school teachers. As of the academic year 2021-2022, the 12+2 program is being offered at all 16 Provincial Teacher Training Centers (PTTCs) across the country and one of the two newly established Teacher Education Colleges (TECs) (see Table 1.2 for a list of all Teacher Training Centers in Cambodia). Since the academic year 2018-2019, the 12+4 program has been offered at the two TECs.

Table 1.2

Teacher Training Centers (TTCs) in Cambodia

Training Levels	Number of TTCs	Name of TTCS
Preschool	1	Preschool Teacher Training Center
Primary School	16	Provincial Teacher Training Centers
Lower Secondary School	4	Regional Teacher Training Centers
Primary and Lower Secondary School	2	Phnom Penh Teacher Education College Battambang Teacher Education College
Upper Secondary School	1	National Institute of Education
Lower Secondary School (Physical Education and Sports)	1	National Institute of Physical Education and Sport
Lower Secondary School (Technical Vocational Skills)	1	Kampong Chheuteal Institute of Technology
Special Education (All levels)	1	National Institute for Special Education
Total		27

Source: Adapted from Sieng (2021)

Despite the heightened entry requirements, the lengthening of the training duration with enhanced training curricula, and the emerging attention paid to in-service teachers' professional development, the quality of teacher education in Cambodia (both pre-service and in-service) has been challenged by a number of critical issues spanning all levels of education. A widely discussed issue is the failure to attract highly competent and motivated individuals to enter the teaching profession due mainly to the low social and financial status of teachers (Benveniste, Marshall, & Araujo, 2008; Hang, 2018; MoEYS, 2015; No & Heng, 2017; Pich, 2017; Prigent, 2016; Sot, Chey, & Chhinh, 2022; Tandon & Fukao, 2015). In particular, over one-third of TTCs that participated in Tandon and Fukao's (2015) survey reported difficulties recruiting qualified teacher trainees and dissatisfaction with their caliber. Teachers' perceived low social and financial status has also caused a high attrition rate. It has been reported that the education system in Cambodia loses more than 2,000 teachers every year, while the TTCs can only recruit and train about 5,000 new teachers each year to meet the demands of the continuously expanding education sector. (Hang, 2018; MoEYS, 2015). This number would be much higher if it were to include retired and deceased teachers (Prigent, 2016). Compared to the training capacity of TTCs, the losses are quite substantial, whereas the education system keeps expanding. This phenomenon has led to the misutilization of existing teachers as a result of an inadequate supply of teachers at all educational levels (Benveniste et al., 2008; Tandon & Fukao, 2015).

Another critical issue pertains to the low quality of pre-service teacher training programs, which is constrained by a number of factors. They encompass the

limited qualifications of teacher trainers (Chhinh, 2020; Pich, 2017; Sot et al., 2019; Tandon & Fukao, 2015), inadequate training resources and facilities (Dickinson, 2015, as cited in Sot, Sok, & Dickinson, 2019; Tandon & Fukao, 2015), disconnection between theory and practice (Pich, 2017; Prigent, 2016; Williams et al., 2016), and ineffective teaching and learning approaches (Prigent, 2016; Tandon & Fukao, 2015).

According to the most recent data, Cambodia's teaching workforce comprises 94,718 teachers, of which about 48% (45,148) are primary school teachers (MoEYS, 2022). Due to the employment of different pre-service training formulas, about 80% of all primary school teachers in Cambodia hold qualifications below a bachelor's degree (MoEYS, 2022). The limited qualifications of teachers in Cambodia in general and specifically at the primary school level indicate the need for a well-designed and sustained continuous professional development (CPD)² program for the existing teaching workforce to respond to their classroom needs and new educational demands. In Cambodia, however, the dearth of a well-designed, coordinated, and coherent CPD program for in-service teachers has undermined teacher quality. With teachers having been through different pre-service training formulas, the limited quality of pre-service teacher training programs, the absence of an induction process for beginning teachers, and educational changes caused by various reforms in recent years, such as school curricula, pedagogical methods, and integration of information and communication technology (ICT), CPD for in-service teachers has become more necessary than ever. However, the provision of CPD opportunities for teachers in Cambodia was

² Continuous professional development (CPD) is used interchangeably with in-service teacher training/education in this dissertation.

reported to be severely inadequate, following a combination of the cascade, ad hoc, and piecemeal approaches and is primarily driven by donors' technical and financial support and educational changes, such as changes in school curricula, textbooks, or teaching methodologies (Kheang, O'Donoghue, & Clarke, 2018; King, 2018; MoEYS, 2019a; No & Sok, 2022; Phin, 2014; Pich, 2017; UNESCO, 2015b). Such external support from international non-governmental organizations (NGOs) or development partners is often limited in both scope and time frame (Phin, 2014; Pich, 2017). Teachers themselves are also reluctant to engage meaningfully in their CPD as their participation does not lead to any substantial benefits such as promotion prospects or future increases in salary (No & Sok, 2022).

At the primary school level, a regular avenue of CPD for in-service teachers is the Thursday Technical Meeting (TTM), primarily led by school directors and grade leaders and held once a month for a half-day at either individual school or school cluster. According to King (2022), the meeting is structured into two parts. All staff members attend the first part, and the second part is for separate grade group meetings. However, previous studies showed that the TTM was not efficiently used to meet teachers' CPD needs; instead, it became a platform for school directors and/or district education officials to pass on news from MoEYS and discuss school issues (King, 2018). In the event that the school director or a teacher team leader had participated in any MoEYS-organized workshop or training, they would subsequently use the TTM to share what they had learned (King, 2018). A systematic follow-up/monitoring of TTM was also absent (Bo et al., 2019).

Other issues confronting teacher education in Cambodia include the low motivation of in-service teachers (Benveniste et al., 2008; MoEYS, 2015; Prigent, 2016; Sot et al., 2022) and weaknesses of school leadership at both public schools and TTCs (Dy, 2017; Dy et al., 2019; Prigent, 2016).

The issues highlighted above were known to MoEYS and have triggered the introduction and formulation of several policies, action plans, standards, frameworks, guidelines, and programs. Table 1.3 below enumerates the notable ones.

Table 1.3

Key Documents and Programs Introduced in Recent Years

No.	Name of Document/Program	Year
1	Competency Standards for Directors of Teacher Training Centers	2014
2	Teacher Policy Action Plan (TPAP)	2015
3	Teacher Education Provider Standards	2016
4	Teacher Professional Standards	2016
5	School Director Standards	2017
6	Policy on Continuous Professional Development for Education Staff	2017
7	The Establishment of Teacher Education College (E-TEC) Project	2017
8	The Introduction of the 12+2 Pre-Service Teacher Training Program (Credit System)	2017
9	Policy Framework on Teacher Career Pathways	2018/2021
10	Strengthening Teacher Education Programme in Cambodia (STEPCam)	2018
11	The Introduction of the 12+4 Pre-Service Teacher Training Program (Credit System)	2018
12	Continuous Professional Development Framework for Teachers and School Directors	2019

13	CPD Handbook: A Guide to Continuous Professional Development for Teachers, School Directors, and Education Specialists in Cambodia	2021
14	System for Continuous Professional Development Credit Acquisition	2021
15	Handbook on the Establishment of Professional Learning Community (PLC) at Public Education Institutions	2021
16	Teacher Educator Professional Standards	2022
17	The Provision of Monthly Stipends for Pre-Service Teachers	2022

Source: MoEYS (various years)

Among these, the TPAP, which was approved and published by the Teacher Training Department in 2015, has been seen as a comprehensive and ambitious roadmap for teacher reform in Cambodia, providing a patent direction for systemic reform and implementation as the next step of the teacher policy approved in May 2013 (MoEYS, 2015). The development of the TPAP 2015 took into account Cambodia's situation and was guided by the World Bank's Systems Approach for Better Education Results (SABER)-Teachers Framework (Dy, 2017). The World Bank's SABER-Teachers Framework consists of ten policy dimensions. They are (1) requirements for entering and remaining in the teaching profession, (2) initial teacher preparation, (3) recruitment and employment, (4) teachers' workload and autonomy, (5) professional development, (6) compensation: salary and non-salary benefits, (7) retirement rules and benefits, (8) monitoring and evaluation of teacher quality, (9) teacher representation and voice, and (10) school leadership (World Bank, 2013). In the big picture, Cambodia's TPAP 2015 focuses on four essential areas: (1) pre-service teacher education and recruitment, (2) professional development for in-service teachers, (3) teacher management and teacher career pathway, and (4) school environment, including textbooks, curricula, and inspection (MoEYS, 2015). Even though the TPAP 2015 was initially designed to

be implemented from 2015 to 2020, a number of activities have yet to be achieved and remain outstanding. Therefore, MoEYS has placed the implementation of the TPAP 2015 as the number one priority of its five-pillar framework in the Education Strategic Plan 2019-2023 (MoEYS, 2019b).

1.2 Statement of Research Problems

The knowledge base for teaching, which comprises vital knowledge domains such as content knowledge, general pedagogical knowledge, pedagogical content knowledge, and knowledge of context, is the cornerstone of professional knowledge for teaching (Grossman, 1990; Shulman, 1987). There is a firm consensus that teachers' knowledge and skills significantly impact their classroom practices and lie at the root of effective teaching (Fennema & Franke, 1992; Walshaw, 2012). Thus, there is often a call for pre-service teacher education to have a sharper focus on equipping pre-service teachers with a strong knowledge base for teaching (Kosnik & Beck, 2009; Tatto, 2008). Beyond initial training, CPD for in-service teachers also plays a vital role in enhancing their professional knowledge, skills, and attitudes in response to new educational demands and practices (Day & Sachs, 2004; Guskey, 2000).

While a sound knowledge base is a crucial element to quality teaching, relatively little is known about how the 12+2 teacher training program in Cambodia is perceived in terms of building the knowledge base of pre-service primary school teachers. A few large-scale studies from many years ago, such as those of Prigent (2016) and Tandon and Fukao (2015), shed much light on pre-service primary school teacher education in Cambodia. However, there is a relative knowledge

gap after a number of key policies, frameworks, action plans, and programs have been put in place in recent years to enhance pre-service teacher preparation in Cambodia. As regards CPD for teachers, growing conceptions of effective CPD have been found in the literature (see, for example, Darling-Hammond et al., 2017; Desimone, 2009; Garet et al., 2001; Guskey, 2003b; Whitehouse, 2011). However, it has been acknowledged that CPD for teachers is very context-bound, meaning that existing conceptions of effective CPD might not adequately address specific contexts (Darling-Hammond et al., 2017; Guskey, 2003b; Whitehouse, 2011). In Cambodia, with almost 80% of all in-service primary school teachers holding qualifications below a bachelor's degree (MoEYS, 2022), it is imperative to have an effective CPD program that takes into account the reality of their professional context. However, to the best of my knowledge, there has been no comprehensive research looking at this vital domain, especially one that delves into it from the perspectives of in-service primary school teachers themselves. Moreover, although previous research, as highlighted in the preceding section, has unveiled the challenges confronting primary school teacher education in Cambodia, there is still a limited understanding of what remains to be addressed following the implementation of key policies, frameworks, action plans, and programs in recent years.

These knowledge gaps result from a general lack of research capacity and engagement in Cambodia (Eam, 2015; Heng, Hamid, & Khan, 2022; Kwok et al., 2010) and could have consequences on the quality of teacher education it is expected to attain, especially after a number of key policies, frameworks, action plans, and programs have been put in place in recent years. As Mthethwa (2012)

argued, it is vital to consider the perspectives and feedback of those affected by a particular policy or program as they will help policymakers and implementers “assess interim achievements, make necessary course corrections, and consider themselves as part of a larger effort” (pp. 44-45). The knowledge gaps could also constrain the success of future policy formulation and interventions, particularly in a developing country like Cambodia, where policy formulation tends to be broad and sweeping (Smith, 1973). As Sok and Bunry (2021) observed, because of “limited national resources, ambitious policy intent and donors’ dependence without national gap-filling investment, Cambodia is known for developing pretty comprehensive policies, which are not implemented fully” (p. 206).

Moreover, a large proportion of global knowledge, including the field of teacher education (pre-service teacher education and CPD for in-service teachers), has emanated from Western and developed contexts, creating global knowledge inequality (Altbach, 2003; Canagarajah, 2002; Demeter, 2020; Heng, 2023; Medina, 2014). While such knowledge has informed and influenced global policies and practices of teacher education, it overlooks unique contextual elements (e.g., sociocultural, economic, political, and historical factors) that shape teacher education in developing and underrepresented contexts such as Cambodia (Ananin & Lovakov, 2022; Dy, 2017; Muzaffar et al., 2011; Saavedra & Pérez, 2018; Whitehouse, 2011). This creates a literature void in our knowledge of teacher education that could undermine the development of theoretical frameworks in teacher education programs within these contexts. Consequently, more research on teacher education in such contexts is necessary.

1.3 Purpose of the Study

This study aims to accomplish three goals. The first goal is to contribute to a fresh understanding of contemporary primary school teacher education in Cambodia (both pre-service teacher education and in-service teacher education/CPD) after several key policies, frameworks, action plans, and programs have been put in place in recent years. In order to realize this goal, the study explores the perceptions of key actors on the ground, including in-service teachers, pre-service teachers, and teacher trainers, concerning the development of pre-service primary school teachers' knowledge base for teaching through the 12+2 teacher training program, focusing on four knowledge domains. They include content knowledge, pedagogical knowledge, pedagogical content knowledge, and knowledge of context. In contribution to the same goal above, the study also seeks to understand what constitutes effective CPD for in-service primary school teachers in the context characterized by limited resources and support and identify challenges that can hinder the effective provision of both pre-service teacher education and in-service teacher education/CPD in Cambodia. These insights are to add to the existing body of literature on primary school teacher education in Cambodia – a domain that has been relatively underdeveloped and underrepresented in the international literature.

The second goal of this study is to further support the development of primary school teacher education in Cambodia in particular. However, the study might also have implications for other contexts with similar social, educational, and economic characteristics. To this end, the study endeavors to generate research-based data related to the research questions to inform relevant stakeholders and provide

recommendations based on the findings to strengthen pre-service primary school teacher education and enhance the effectiveness of CPD provision for in-service primary school teachers.

The third goal of the study is to extract any theoretical insights that could be valuable or applicable to the broader context while delving into the research questions. In order to achieve this goal, the study explores any particular phenomena or perspectives that may have influenced the development of pre-service primary school teachers' knowledge base for teaching and CPD for in-service primary school teachers in Cambodia.

1.4 Scope of the Study

Currently, two training formulas, specifically the 12+2 and 12+4, are being employed to train pre-service primary school teachers in Cambodia. The 12+4 training program was launched in the academic year 2018-2019 after merging some TTCs into two TECs in 2017, and as of the academic year 2020-2021, when the present study began, the program had not yet yielded a cohort of primary school teachers. However, the 12+2 formula remains the predominant training program and is presently offered at all 16 PTTCs across the country and one of the two newly established TECs as of the academic year 2021-2022. As per MoEYS's public announcement in August 2021, a total of 1,514 primary school teachers were slated to be recruited for 2021-2022. Notably, the proposed recruitment plan outlined that a mere 300 teacher candidates (equivalent to approximately 20% of the total) would be selected for the 12+4 teacher training program (MoEYS, 2021b). Thus, the scope of this study is limited to the 12+2

teacher training program, which thus far remains a dominant training program. The contemporary 12+2 teacher training program for pre-service primary school teachers follows a credit-based evaluation system and is structured into seven components: educational studies (professional skills), foundational knowledge, subject-based teaching methodology, promotion of national language and official speaking skills, common subjects, practicum, and pedagogical research (MoEYS, 2017). To complete the 12+2 teacher training program, pre-service primary school teachers must earn 62 credits, equivalent to 1,605 hours of theory and practice combined (MoEYS, 2017).

In adherence to the scope of research, the study exclusively recruited participants who were involved in the 12+2 teacher training program. In particular, pre-service teacher and teacher trainer participants were selected from only one of the 16 PTTCs and one of the two newly established TECs. This deliberate selection aimed to provide an all-inclusive representation of both the long-standing and recently enhanced teacher training institutions that offer pre-service primary school teacher education in Cambodia. In-service teachers were selected from various public primary schools in a province and the capital city, Phnom Penh, to represent both provincial and municipal primary schools.

1.5 Significance of the Study

This study is significant in several ways. First, this study provides the latest insights into contemporary primary school teacher education in Cambodia (both pre-service teacher education and in-service teacher education/CPD), with specific regard to (1) how the 12+2 teacher training program is perceived to develop the

knowledge base of pre-service primary school teachers, (2) what constitutes an effective CPD program for in-service primary school teachers in Cambodia, considering their professional contexts, and (3) pressing challenges hindering both pre-service and in-service primary school teacher education/CPD in Cambodia. These insights add to the body of scholarly research and literature on primary school teacher education in Cambodia, which has been comparatively underdeveloped and underrepresented in the international literature. Second, the study generates research-based data and recommendations that can be utilized by relevant stakeholders, such as teacher education institutions, educators, policymakers, and development agencies, to inform their current practices, decision-making processes, and future interventions. With that said, the study contributes to the ongoing efforts to enhance primary school teacher education in Cambodia. It may also contribute to informing international development strategies and facilitating global policy adjustments for teacher education in developing countries such as Cambodia. Last but not least, even though this study focuses specifically on primary school teacher education in Cambodia, its theoretical contributions pertaining to the misconception management of content knowledge and conceptualization of effective CPD in resource-deficient contexts, as explicated in Chapter 8, can be of benefit in the broader context. It will contribute to reviewing the theoretical framework of teacher education programs to tailor teachers' development process of knowledge base, ensuring their career-long professional growth.

1.6 Research Questions

To achieve the overall research purpose, the study endeavors to bring answers to

the following research questions. These research questions provide overall direction for the study regarding its focus, research design, and methodology.

1. How is pre-service teacher education in Cambodia perceived in terms of building the knowledge base of pre-service primary school teachers for teaching?
2. What are Cambodian primary school teachers' perspectives on effective continuous professional development, considering their professional context of constrained resources and support?
3. What challenges can hinder the effective provision of teacher education in Cambodia in terms of producing qualified primary school teachers with a solid knowledge base for teaching and enhancing in-service primary school teachers' quality through in-service training/continuous professional development?

The first research question seeks to understand the perception of pertinent stakeholders on the ground, including in-service teachers, pre-service teachers, and teacher trainers, concerning the development of pre-service primary school teachers' knowledge base for teaching through the 12+2 teacher training program. This question explores their perceptions of four knowledge domains: content knowledge, pedagogical knowledge, pedagogical content knowledge, and knowledge of context. The second research question delves into in-service primary school teachers' perspectives on what constitutes effective CPD, considering their professional context of constrained resources and support. In this study, the 'effectiveness' of CPD refers to the enhancement of teachers'

knowledge, skills, and practices through various professional development activities, leading to improved student learning outcomes. The third research question consists of two parts exploring challenges that can impede the effective provision of both pre-service and in-service primary school teacher education/CPD through insights from teacher trainers and in-service teachers, respectively.

1.7 Structure of the Dissertation

This doctoral dissertation is organized into eight chapters, including (1) Introduction, (2) Theoretical Frameworks, (3) Literature Review, (4) Research Design and Methodology, (5) Perceptions Toward the Building of Knowledge Base for Teaching, (6) Effective CPD from In-Service Primary School Teachers' Perspectives, (7) Challenges Hindering the Effective Provision of Teacher Education, and (8) Conclusions and Recommendations. The following provides synopses of the main focus of each chapter.

Chapter 1 provides an overview of the study. It begins by providing the historical development of primary school teacher education in Cambodia after the fall of the Khmer Rouge regime in 1979 and highlighting critical challenges confronting both pre-service teacher education and in-service teacher education/CPD, leading to the introduction of several key policies, frameworks, action plans, and other initiatives. It then lays out the research problems and purpose of the study. The scope of the study, its significance, and research questions are also presented in this chapter. Finally, the chapter outlines the brief structure of the dissertation.

Chapter 2 provides justifications for the use of theoretical frameworks to underpin

the study. It explains the conceptions of teacher knowledge pertaining to four knowledge domains: content knowledge, pedagogical knowledge, pedagogical content knowledge, and knowledge of context. It also elucidates key assumptions or principles of adult learning theory (andragogy) and situated learning theory, which are greatly relevant to how teachers learn in their professional development process.

Chapter 3 reviews some key literature and debates pertaining to pre-service teacher education and its significance, the effective design of pre-service teacher education, the roles of teacher knowledge in teaching, some key issues in teacher education, and teacher policy from a global perspective. The chapter also reviews key literature and debates on CPD for teachers, including its definitions, activities, impact, some major CPD models, effective CPD, evaluation of CPD, and the notion of incomplete knowledge about effective CPD. Moreover, the chapter highlights the broader literature gap that makes the study worthwhile beyond the Cambodian context.

Chapter 4 presents detailed information about the overall research design and methodology that the study utilizes. Specifically, it provides a detailed account of the study's research design, positionality of the researcher, data collection method, sampling technique, data analysis, validity and reliability, and ethical considerations.

Chapters 5, 6, and 7 present and discuss the study's key findings. These three chapters are structured following the order of the research questions. Chapter 5

focuses on stakeholders' perceptions of the 12+2 teacher training program in building the knowledge base of pre-service primary school teachers in Cambodia. Chapter 6 presents the characteristics of effective CPD from the perspectives of in-service primary school teachers in Cambodia. Chapter 7 has two parts. First, drawing on interview responses from seven teacher trainers, the chapter brings to the fore challenges impeding the effective provision of pre-service teacher education. Second, based on interview responses from 12 in-service primary school teachers, the chapter accentuates the challenges hampering the effective provision of in-service teacher education/CPD.

Chapter 8, which is the last chapter, restates the overall purpose and research questions of the study before providing a summary of the major findings. The chapter then draws attention to the study's contributions and provides research-based recommendations to enhance primary school teacher education in Cambodia. Following that, the chapter discusses the limitations of the study and concludes with suggestions for future research.

CHAPTER 2: Theoretical Frameworks

This chapter presents the theoretical frameworks guiding the study. It begins by first challenging the notion of not using theoretical frameworks in qualitative research and then justifies the use of theoretical frameworks in different ways to underpin the present study. Following that, theoretical frameworks related to teacher knowledge for teaching, adult learning theory (andragogy), and situated learning theory are presented. Lastly, the chapter is wrapped up with a brief summary.

2.1. The Use of Theoretical Frameworks in This Study

Cohen et al. (2018) defined theory as “a general set of principles that are independent of the specific case, situation, phenomenon or observation to be explained” (p. 70). It can be a combination of experience-based and literature-based theories (Savin-Baden & Major, 2013). However, there are many controversies over the use of theory in qualitative research. While there is a consensus about the role of theory in quantitative research, it is not the case for qualitative research (Anfara & Mertz, 2015). It is often argued that since qualitative research aims to explore diverse perspectives and meanings about an issue or problem under a study, using theory will go against this purpose. Even so, many researchers and scholars have disagreed with the argument. For instance, Savin-Baden and Major (2013) argued that:

Social scientists are more frequently being called to both elaborate and prove their reliance upon theories and concepts in their work. Increasingly, journals and conferences are requiring the inclusion of a theoretical or conceptual framing section, and often dissertation and thesis advisors and committee members are calling for the same. (p. 142)

In addition, Merriam and Tisdell (2015) stated that “many mistakenly believe that theory has no place in a qualitative study” (p. 84). They further emphasized that it is hard to imagine conducting a study without a theoretical framework because we would not know what to do. Cohen et al. (2018) also supported that we cannot avoid theory in our research; it underpins our study, whether or not it is made explicit.

In line with the argument that the role of a theoretical framework is integral to qualitative research, the study presented in this doctoral dissertation engaged several theoretical perspectives to provide a comprehensive and robust foundation for the study in the following ways:

- To show that the study is well-grounded in established concepts and theories
- To identify relevant literature, concepts, and studies that could support the study
- To guide the effort of data collection
- To support the analysis and interpretation of the findings.

According to Grant and Osanloo (2016) and Marshall and Rossman (2016), a theoretical framework provides a conceptual grounding for a study. It also “allows

for a more rigorous and robust study” (Savin-Baden & Major, 2013, p. 142). Kivunja (2018) also concurred that a theoretical framework provides a scholarly foundation for a study and enables the researcher to make sense of meaning in data. Theoretical frameworks used in this study tend to be broad and abstract in terms of meanings; however, they are helpful in identifying relevant literature, concepts, and previous studies to explain the findings and establish a theoretical groundwork for the study as a whole. As Grant and Osanloo (2016) argued, one of the key roles of a theoretical framework in research is to guide the research process in identifying relevant concepts or constructs. With regards to data collection, Merriam and Tisdell (2015) and Savin-Baden and Major (2013) see a theoretical framework as a lens to guide data collection. Specific to this study, the theoretical frameworks facilitated the collection of relevant data needed to address the research questions.

The paramount significance of the theoretical frameworks in this study lies in their role in facilitating the analysis and interpretation of the findings. Prevailing consensus argues that a theoretical framework provides a structure to view the data and interpret findings (Collins & Stockton, 2018; Kivunja, 2018; Merriam & Tisdell, 2015; Savin-Baden & Major, 2013). In this study, the theoretical frameworks were instrumental in directing the collection of data necessary to address the research questions and the discussion of the findings in a cogent manner, considering what existing theories or concepts say.

A theoretical framework, according to Merriam and Tisdell (2015), encompasses “terms, concepts, models, thoughts, and ideas as well as references to specific

theories” (p. 84). In light of this, the study identified some potentially relevant conceptions and theories presented in the next section.

2.2. The Study’s Theoretical Frameworks

2.2.1. Teacher Knowledge

There is a firm consensus that teacher knowledge plays a critical role in effective teaching because it has the most influence on teachers’ classroom practices (Fennema & Franke, 1992; Hiebert, Gallimore, & Stigler, 2002; Magnusson, Krajick, & Borko, 1999; Poulson, 2001; Schleicher, 2016; Walshaw, 2012). In 1986, Lee Shulman, an eminent American educational psychologist widely recognized for his notable contributions to the study of teaching and teacher education, particularly the conceptualization of ‘pedagogical content knowledge,’ advocated seven categories of teacher knowledge that a teacher must have in order to teach. These categories of teacher knowledge comprise:

- content knowledge;
- general pedagogical knowledge, with special reference to those broad principles and strategies of classroom management and organization that appear to transcend subject matter;
- curriculum knowledge, with particular grasp of the materials and programs that serve as “tools of the trade” for teachers;
- pedagogical content knowledge, that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding;
- knowledge of learners and their characteristics;
- knowledge of educational contexts, ranging from the workings of the group or classroom, the governance and financing of school districts, to the character of communities and cultures; and
- knowledge of educational ends, purposes, and values, and their philosophical and historical grounds. (Shulman, 1987, p. 8)

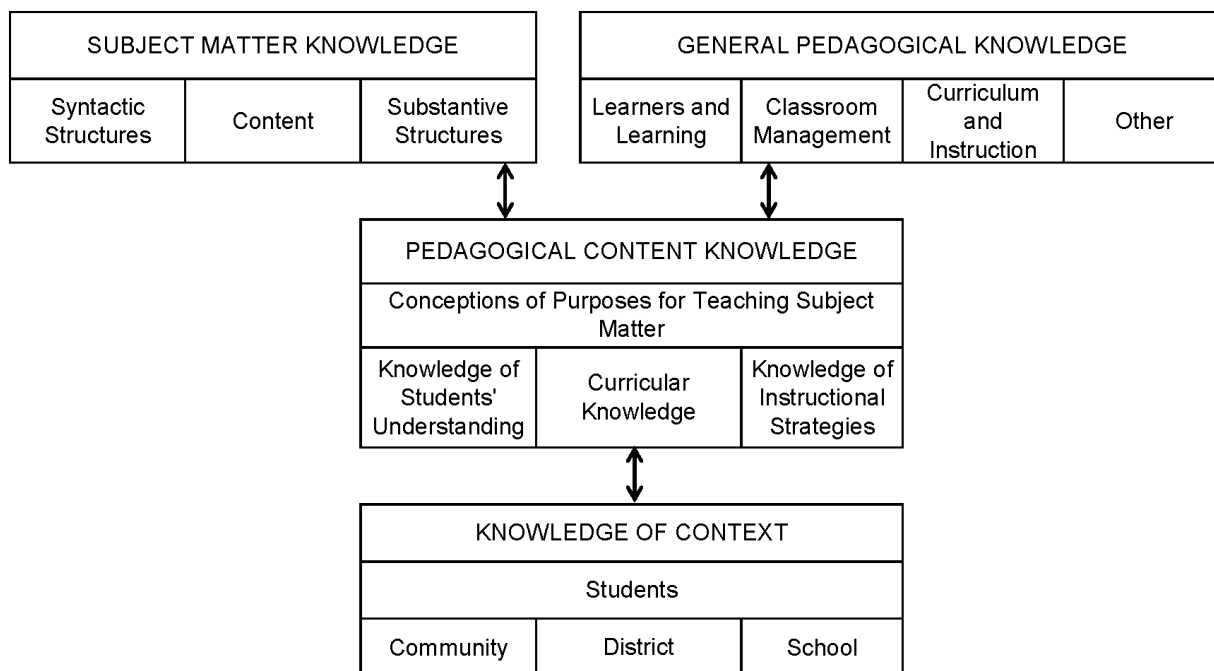


Figure 2.1 Teacher Knowledge³ (Grossman, 1990, p. 5)

Later, in 1990, Pamela Grossman, another prominent academic and researcher, proposed a more systematized conception of teacher knowledge (see Figure 2.1) following Shulman (1987). Pamela Grossman classified four broad areas of teacher knowledge as the cornerstone of professional knowledge for teaching. They consist of (1) subject matter knowledge, (2) general pedagogical knowledge, (3) pedagogical content knowledge, and (4) knowledge of context.

According to Fernandez (2014), Grossman's (1990) model of teacher knowledge is a structured and refined version of Shulman's (1987) conceptions of the knowledge base for teaching. Grossman (1990) grouped relevant knowledge areas into broader domains, offering greater elucidation. In addition, Grossman's

³ Reprinted by permission of the publisher. From Pamela Grossman *The Making of a Teacher: Teacher Knowledge and Teacher Education*, New York: Teachers College Press. Copyright © 1990 by Teachers College, Columbia University. All rights reserved.

(1990) model demonstrates inseparable interactions of other knowledge domains with pedagogical content knowledge (PCK) and vice versa. For the first time in 1986, Lee Shulman conceptualized PCK, which he called a unique element of the knowledge base for teaching. Since then, the conception of PCK has gained momentum and represented a substantial shift in later research on teacher knowledge and teacher education at large (Fernandez, 2014).

Following Grossman's (1990) model, several other models pertaining to teacher knowledge were developed, with a tendency towards a focus on science teaching (e.g., Carlson, 1999) and PCK for science teaching (e.g., Magnusson et al., 1999; Park & Oliver, 2008). On the other hand, Grossman's (1990) model of teacher knowledge does not indicate any specific teaching field. Therefore, it is appropriate for the present study, which focuses on teacher knowledge/education at the primary school level. In particular, this model of teacher knowledge was used to explore the perception of how pre-service primary school teacher education in Cambodia through the 12+2 program facilitates the development of the four knowledge domains of pre-service teachers. Each domain of Grossman's (1990) model of teacher knowledge is hereafter explicated.

Subject matter knowledge

Subject matter knowledge⁴ (also known as content knowledge) is a vital component of the knowledge base for teaching. It is teachers' knowledge in a particular subject area(s) of their teaching, for example, science, history, and

⁴ In this dissertation, subject matter knowledge and content knowledge are used interchangeably to refer to facts, concepts, theories, and principles that pertain to particular subjects.

mathematics. Shulman (1986) referred to this knowledge domain as “the amount and organization of knowledge per se in the mind of the teacher” (p. 9). In other words, it concerns the “knowledge of the major facts and concepts within a field and the relationships among them” (Grossman, 1990, p. 6). Drawing on Schwab (1964), both Grossman (1999) and Shulman (1986) included in this knowledge domain the knowledge of substantive and syntactic structures. The knowledge of substantive structures concerns how concepts and principles in a particular discipline are organized in order to establish interrelation and connection within that discipline, while the knowledge of syntactic structures concerns how evidence and proof within the discipline are established and evaluated (Grossman, 1990). In simple terms, in addition to knowing that something is the case, teachers must also know why it is the case (Ball, Thames, & Phelps, 2008). For Shulman (1987), these features of content knowledge are fundamental to teachers’ knowledge base for teaching. Even at the primary school level, if teachers do not have adequate knowledge about their subjects, they will not be confident in teaching them (Poulson, 2001).

General pedagogical knowledge

This knowledge domain refers to the knowledge of general principles of skills and strategies involved in teaching across different curricula. Such knowledge includes, among others, classroom management and organization and instructional strategies (Grossman, 1990; Shulman, 1987). In addition, Grossman (1990) included the knowledge about and beliefs of learners and their learning, curriculum, and the aims and purposes of education in this knowledge domain. Even though few empirical studies have explored the critical role of teachers’

general pedagogical knowledge in teaching, it is widely acknowledged that this knowledge is pertinent to the quality of classroom instruction (Guerriero, 2017).

Pedagogical content knowledge

In 1986, Lee Shulman introduced his conception of PCK for the first time. This notion set a new stage for both theoretical developments and empirical research in teaching and teacher education (Evens, Elen, & Depaepe, 2015; Fernandez, 2014), particularly in science and mathematics education (Hashweh, 2013). By its term, PCK is the intersection where teachers relate their content knowledge (what they know about what they teach) to their pedagogical knowledge (what they know about teaching). Shulman (1987) called PCK a special form of professional understanding, which is distinctively the province of teachers. Reclassifying a few categories of teacher knowledge considered separate by Shulman (1987), Grossman (1990) included four essential components in PCK:

- knowledge and beliefs about the purposes of teaching a subject;
- knowledge of students' understanding, conceptions, and misconceptions of specific topics in a subject;
- knowledge of curriculum involving teachers' clear understanding of curriculum materials of a particular subject area and associated programs that help teachers do their job properly; and
- knowledge of instructional strategies and presentations for teaching specific topics.

As shown in Figure 2.1, PCK has a reciprocal relationship with all other knowledge

domains. In other words, PCK is “the result of a transformation” of other knowledge domains that a teacher possesses (Magnusson et al., 1999, p. 96).

Knowledge of context

Teachers’ awareness of various contextual factors concerning their teaching and students’ learning helps inform their instructional decisions that are suitable for their classrooms and aligned with what is expected both locally and nationally. Such contextual factors include individual students (e.g., their learning backgrounds, family backgrounds, strengths, weaknesses, and interests), community expectations, traditions and culture, and school and government guidelines and policies (Grossman, 1990). From a technological point of view, this contextual knowledge may also include awareness of available technologies and their applications in educational settings (Mishra, 2019).

2.2.2. Adult Learning Theory (Andragogy) and Situated Learning Theory

In order to support the endeavor of identifying characteristics of effective CPD from the perspective of in-service primary school teachers in Cambodia, the study approached two theories, namely adult learning theory (andragogy) and situated learning theory. While adult learning theory emphasizes the distinct characteristics and motivations of adult learners, situated learning theory underscores the importance of authentic contexts in which learning occurs through social interactions. The adoption of this pragmatic approach seeks to leverage their strengths and compensate for their limitations, with the ultimate aim of devising effective CPD for in-service primary school teachers as adult learners in a context

considered critical. Key assumptions or principles of the two theories are hereafter presented.

Adult learning theory: Andragogy

Conceptualized as early as in 1968 by Malcolm Shepherd Knowles (1913-1997), an American educator, the term 'andragogy' refers to the art and science of teaching adults as opposed to pedagogy, the art and science of teaching children (see Fairbanks, 2021; Moberg, 2006). The fundamental notion of andragogy recognizes that how adults learn is different from that of children (Knowles, 1984a, 1984b). Unlike young learners who bring little or no experience to the classroom and engage in educational activities because of external factors (e.g., they have been told to do so), adult learners demonstrate distinctive attributes (Blondy, 2007). Regarding contradicting attributes of adult learners to young learners, Knowles (1984a) made five assumptions about adult learning that were widespread in adult education. Those assumptions are that (1) adult learners are self-directed in their learning, (2) they bring a variety of experiences to the classroom on which they can draw, (3) they enter the classroom with readiness to learn, (4) they have a problem-centered orientation toward their learning, and (5) they are motivated by internal factors.

Knowles (1984a) explained his assumptions by emphasizing the need to recognize the characteristics of adults as they become mature. Based on his observation, mature people shift from being dependent to being self-directed and have a psychological need to be perceived in such a way. Adult learners tend to experience tension between their learning situations and their self-concept if this

vital need is not recognized. Moreover, adult learners possess a wealth of accumulated experience that is an essential resource for their learning and that can be related to their new learnings. Along with this, as opposed to children whose learning readiness is driven by their biological and academic development, the readiness to learn of adult learners is better developed due to their evolving social roles, such as workers, parents, community leaders, institutional members, and the like. As mature persons, adult learners have a specific orientation to their learning, which is to apply their new knowledge and skills immediately to address real-life problems. Knowles (1984a) called this the time perspective of adults, which is directed toward the immediacy of application. Lastly, adult learners tend to be internally motivated. For example, they are motivated when they see the ultimate value in what they are working toward or believe that what they are doing will contribute to the success of their future career goals.

Overall, adult learning theory (andragogy) places great emphasis on the distinct characteristics of how adults learn and their internal motivation to learn.

Situated learning theory

Situated learning theory or situated learning is a theory of learning advanced by Jean Lave and Etienne Wenger in their seminal book entitled “Situated learning: Legitimate peripheral participation” (Lave & Wenger, 1991). In the foreword to the book, it was noted that the focus of situated learning is “the relationship between learning and social situations” in which learning occurs (p. 14). Social engagements play a vital role in learning and are considered to be “an integral and inseparable aspect of social practice” (Lave & Wenger, 1991, p. 31). In situated

learning theory, learning is a process of legitimate peripheral participation in communities of practice; that is, learning is the outcome of the “relationships and interactions between *newcomers* and *old-timers* or *more knowledgeable others*” in a dynamic and interactive process of support, guidance, and construction of practice and identity (O’Brien & Battista, 2019, p. 2).

Lave and Wenger (1991) argued that situated learning theory could allow the shifting of the focus from the individual learners to the learning process construed as participation in the social world and from an emphasis on learning as cognitive processes to learning as social practice. When learning is viewed as social practice, it implies that learners go through different stages of the learning process, from apprentices or newcomers to becoming part of a community of practice through a process of legitimate peripheral participation, interacting with old-timers and mastering the necessary knowledge and skills, before moving toward full participation in the community of sociocultural practice (Lave & Wenger, 1991).

According to O’Brien and Battista (2019), four key terms are associated with situated learning theory. They include (1) situated learning, (2) legitimate peripheral participation, (3) communities of practice, and (4) identities. First, situated learning refers to “a dynamic, social process that occurs in a cultural and historical context, rather than as a process that rests solely in the individual” (O’Brien & Battista, 2019, p. 3). This social process involves learning new knowledge and skills through interactions with old-timers, activities, and tasks. Second, legitimate peripheral participation is a process through which newcomers

or novices accumulate knowledge and skills and become more competent by first participating in the community of practice on the margin before becoming a full member of the community of practice through engagement in that community (Flowerdew, 2000). Third, communities of practice refer to “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2011, p. 1). Three characteristics are essential for a community of practice: a shared domain of interest; interactions between members of the community allowing them to share information and learn from one another; and a shared repertoire of resources, stories, or tools that can be used to improve practice (Wenger, 2011). Finally, identities of learners or members of the community of practice are constructed and reconstructed as their membership of the community evolves in accordance with their interactions or engagement with people, activities, and/or tasks in that community (Lave & Wenger, 1991; Wenger, 1999).

Besar (2018) noted that situated learning was first defined by John S. Brown, Allan Collins, and Paul Duguid in their 1989 article titled “Situated cognition and the culture of learning.” The concept later gained traction, particularly after Lave and Wenger’s (1991) work. Besar (2018) added that, in situated learning theory, “knowledge should be delivered in an authentic context” (p. 49) and that learning requires interactions, collaboration, and engagement in the community of practice in which learners gradually develop their knowledge and skills as well as the transition from newcomers to old-timers or experts in that community of practice. Likewise, Bell, Maeng, and Binns (2013) argued that “knowledge must be learned in an authentic context of how it might be used, and interactions between

individuals often result in knowledge” (p. 351).

In situated learning theory, learning takes place in an authentic context through interactions between members of communities of practice when they share information, help one another, and work together to improve their practice (Wenger, 2011). Through this interactive and supportive process, knowledge and skills are gained, and novices will, over time, develop into experts. Wenger (2009) also argued that learning is social participation, involving one’s active engagement in activities with people within social communities in which one’s identities are constructed in relation to the practices of the communities. Wenger has further postulated that four components are necessary to make social participation a process of learning. These include:

- *Meaning*: a way of talking about our (changing) ability – individually and collectively – to experience our life and the world as meaningful;
 - *Practice*: a way of talking about the shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in action;
 - *Community*: a way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognizable as competence;
 - *Identity*: a way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities.
- (Wenger, 2009, p. 211, emphasis in original).

Overall, situated learning theory emphasizes the significance of authentic contexts in which learning takes place through social interactions and collaboration with others, especially within the community of practice.

Summary

This chapter has begun by challenging the notion that a theoretical framework lacks relevance in qualitative research due to the belief that adopting such a framework in a qualitative study may restrict the extent to which a broad range of perspectives and meanings about a phenomenon can be explored. In line with the view opposing this notion, the chapter has justified the key role of theoretical frameworks in qualitative research and explicated how theoretical frameworks were utilized to underpin the present study in a number of ways. These include, among others, identifying relevant literature, supporting the data collection effort, and facilitating the analysis and interpretation of the findings. Then, the chapter presented a model of teacher knowledge consisting of four broad domains: subject matter/content knowledge, general pedagogical knowledge, pedagogical content knowledge, and knowledge of context. This model was employed to examine how the development of the four knowledge domains was perceived through the 12+2 teacher training program. Finally, the chapter presented key assumptions or principles of adult learning theory (andragogy) and situated learning theory, which were adopted to identify the attributes of effective CPD from the perspective of in-service primary school teachers who were interviewed for the study.

CHAPTER 3: Literature Review

This chapter aims to introduce some key literature and debates on a number of topics pertaining to pre-service teacher education and CPD for teachers. First, the chapter discusses pre-service teacher education and its significance, conceptions on designing effective pre-service teacher education, the role of teacher knowledge in teaching, common issues in teacher education, and a global perspective on teacher policy dimensions that govern teacher education (both pre-service and in-service/CPD) and its associated activities. Subsequently, the chapter surveys key literature and debates on CPD for teachers, with a focus on its definitions, activities, impact on teaching and learning, major CPD models, effective CPD, CPD evaluation, and incomplete knowledge about effective CPD. Before ending with a concluding summary, the chapter highlights the broader literature gap that necessitates the study and makes it worthwhile beyond the Cambodian context.

3.1 Pre-Service Teacher Education and Its Significance

Pre-service teacher education (also known as initial teacher education) is a crucial stage of the continuum of teacher learning (Muzaffar, Rahim, & Jessee, 2011; Schwille, Dembélé, & Schubert, 2007). Most people think pre-service teacher education is the first continuum of learning to teach; however, the learning-to-teach process of teachers starts even before their formal pre-service education (UNESCO, 2021). Lortie (2002) termed this early learning an “apprenticeship of

observation” in which prospective teachers learn about teaching through their schooling experience with earlier teachers (p. 61). According to Schwille et al. (2007), research has shown that this earlier learning greatly influences how prospective and early-career teachers think about teaching. With this, Schwille et al. (2007) classified the continuum of teacher learning into four progressive stages, including the apprenticeship of observation, pre-service teacher education, induction, and continuing professional development (CPD). In many countries, especially developing ones, the regulations of pre-service teacher education are enacted by governments or accredited national institutions (Muzaffar et al., 2011). This regulatory power allows governments to ensure the quality of teacher preparation programs and their alignment with national policies and the changing needs of society (World Bank, 2013). Because educational goals, strategic policies, national needs, and resources vary from country to country, pre-service teacher education programs come in great diversity in terms of, for example, duration and training curriculum (Muzaffar et al., 2011). Even though entry requirements, length of training, training curriculum, and certification process vary from one context to another, pre-service teacher education usually includes a combination of theoretical coursework and teaching practicum (Muzaffar et al., 2011). Most pre-service teacher education curricula comprise vital components such as subject content, general pedagogical knowledge, pedagogical content knowledge, professional or education-related studies, and teaching practice (Lewin, 2004). However, the list of training components on which teacher preparation programs focus is not exhaustive. Depending on local policies and standards that govern the quality of pre-service teacher education in each country, this initial education may also include programs that foster personal growth and

other soft skills of pre-service teachers (Lewin, 2004). In general, pre-service teacher education programs are tailored to meet changing social needs and are guided by the education policies and sociocultural contexts of each country in order to make sure that prospective teachers are well-prepared to take up classroom challenges and responsibilities and provide high-quality education to students. As UNESCO (2015) recommended:

The content and curricula of teacher training programmes should be specific to the local context; be aligned with national education policies and specific classroom issues, such as language policies; combine theory and a significant amount of classroom-based teaching practice, and lead trainees to become 'reflective practitioners'. (p. 21)

With the increasing call for a better quality of education worldwide, pre-service teacher education is under intense pressure to produce qualified teachers, especially in developing countries (Muzaffar et al., 2011). Global movement toward quality education for all, ongoing educational reforms, and growing efforts of more and more countries to realize the so-called knowledge-based economy all contribute to the rising need for high-quality teachers who can teach students to high standards (see Darling-Hammond, 2005; Muzaffar et al., 2011). Therefore, the role of pre-service teacher education has become even more crucial to successful education systems and economic and social development as a whole (Tatto & Menter, 2019).

A significant role of pre-service teacher education is to influence what Kennedy (1999) referred to as the "initial frames of reference" of teachers – those derived from their childhood experiences in classrooms (p. 57). Thus, pre-service teacher

education makes a great contribution to shifting the initial thinking of prospective teachers. Kennedy (1999) argued that:

From their experiences, teachers develop the ideas that will guide their future practices. If these ideas are not altered during preservice teacher education, teachers' own continuing experiences will reinforce them, cementing them even more strongly into their understandings of teaching, and reducing the likelihood that these ideas might ever change. (p. 57)

Likewise, Tatto (1998) contended that pre-service teacher education might influence teachers' beliefs about the purposes of education, its roles, and practice.

Moreover, it is widely supported that pre-service teacher education plays a key role in raising teacher quality, which is indispensable in ensuring education quality (Muzaffar et al., 2011; UNESCO, 2015a; World Bank, 2013). Without a doubt, knowledge, skills, and attitudes obtained from pre-service teacher education are brought to the classroom and thus significantly affect student learning (World Bank, 2013). In contemporary society, greater knowledge and more complex skills are necessary for both individuals and nations to survive and succeed (Darling-Hammond, 2006). This can only be attained through high-quality education in which a vital contributor, among other educational resources, is the high ability of individual teachers (Darling-Hammond, 2005; 2006; Khine & Liu, 2022). Overall, pre-service teacher education is significant in ensuring that prospective teachers are well-prepared and equipped with the necessary knowledge, skills, and attitudes to succeed in the classroom, thereby raising the quality of education (UNESCO, 2021).

3.2 Designing Effective Pre-Service Teacher Education

A comprehensive and well-designed pre-service teacher education program can provide future teachers with the necessary knowledge, skills, and dispositions to become effective teachers (Darling-Hammond, 2017). In designing an effective pre-service teacher education program, many considerations must be taken seriously. First and foremost, when developing the program, the historical, socioeconomic, cultural, and political contexts in which such a program emerges must be thoroughly considered because these contexts contribute to developing and shaping a shared vision and goals for the program (Grossman & McDonald, 2008; Muzaffar et al., 2011; Stuart & Tatto, 2000). As UNESCO (2015) advocated, it is important that the training content and curriculum of the pre-service teacher education program are context-specific and aligned with national education policies and classroom issues. Then, considerations need to be given to other structural and institutional parameters (e.g., length; time; location; sequencing; and students' prior knowledge, motivation, and career intentions) and the training curriculum (e.g., outcomes, objectives, competencies, and standards; content; and the teaching-learning processes: pedagogy, assessment, and materials) (Stuart & Tatto, 2000).

Muzaffar et al. (2011), based on their analysis of lessons learned from their field experiences and the literature, proposed eight key principles in designing effective pre-service teacher education programs. They classified those principles into three levels, namely policy level, program level, and institutional level, which can be summarized as shown in Table 3.1.

Table 3.1*Eight Principles in Designing Effective Pre-Service Teacher Education Programs*

Levels	Principles
Policy level	1. A coherent pre-service system is predicated on a shared vision
	2. Eliminate fragmentation in the teacher education system
Program level	3. Effective pre-service teacher education should be aligned with professional standards for teachers
	4. Include a strong practicum
	5. A good program develops and maintains strong linkages with local schools
Institutional level	6. Teacher education institutions require sufficient infrastructure and resources to implement effective pre-service teacher education programs
	7. Effective professional development of teacher educators leads to better program development and implementation
	8. Develop professional learning communities

3.2.1 Policy Level

According to Muzaffar et al. (2011), at the policy level, pre-service teacher education programs need to be developed in alignment with national policies and respond to the real needs of local contexts. Such alignments have been widely acknowledged as fundamental to the development of pre-service teacher education (see, for example, Stuart & Tatto, 2000; UNESCO, 2015a). While taking these into account, relevant stakeholders need to reach a consensus on a shared vision of an ideal pre-service teacher education program that is most contextually suitable (Darling-Hammond, 2014; Muzaffar et al., 2011). Meanwhile, pre-service teacher education programs need to be well coordinated by the relevant actors within the established education system without fragmented implementation of the policies (Muzaffar et al., 2011).

3.2.2 Program Level

At the program level, Muzaffar et al. (2011) advocated that pre-service teacher education programs should be aligned with professional standards for teachers, which outline key statements about knowledge, skills, competencies, and attitudes that pre-service teachers need to demonstrate before they get certified. Even though these standards tend to vary depending on specific contexts, they should encompass, at a minimum, content knowledge, pedagogical knowledge and skills, knowledge about child development and psychology, and instructional skills needed to be effective teachers (Muzaffar et al., 2011). These skills and knowledge have long been regarded as the cornerstone of professional knowledge for teaching (see Grossman, 1999; Kosnik & Beck, 2009; Shulman, 1987). Moreover, Muzaffar et al. (2011) and other researchers and practitioners (e.g., Allen, 2003; Darling-Hammond, 2014; Grossman & Richert, 1988; Smith & Lev-Ari, 2005; Ulvik & Smith, 2011) stressed the significance of having a strong practicum as a core part of pre-service teacher education programs. The practicum (also known as clinical training/practice or field experience) is a kind of supervised, hands-on experience that allows pre-service teachers to apply theoretical concepts they are learning in the coursework to real-world classroom settings and develop teaching skills (Darling-Hammond, 2014). The practicum can include both *microteaching* of a unit of study or a part of it to fellow pre-service teachers at their training institutions and *school-based teaching* at their assigned schools for a specific period of time under the mentorship of regular classroom teachers (Muzaffar et al., 2011, p. 8, emphasis in the original). In order for pre-service teachers to make the most out of such experience, strong supervision from well-

trained and experienced classroom teachers and teacher trainers is necessary, and pre-service teachers themselves need to have a solid grasp of subject matters and general pedagogical knowledge prior to their practicum (Allen, 2003). Thoughtful planning, strong collaboration and support among the relevant stakeholders, and clear guidelines are all crucial to a successful practicum (Muzaffar et al., 2011).

In addition to a strong practicum, Muzaffar et al. (2011) proposed that, at the program level, a good pre-service teacher education program should build and sustain robust relationships and partnerships with local schools. Pre-service teacher education often calls for more substantial inclusion of clinical practice as a vital component of effective teacher preparation (Darling-Hammond, Wei, & Andree, 2010; Darling-Hammond, 2014). Thus, the relationships and partnerships with local schools concern the possibilities for pre-service teachers to get involved intensively in school practice (Van Velzen, Bezzina, & Lorist, 2009). As for practicum, such partnerships will allow pre-service teachers to gain more hands-on classroom experience, observe experienced teachers, and develop relationships with school staff and students. These experiences can help pre-service teachers better understand the realities of the teaching profession and be better prepared for the challenges they will face as educators (Muzaffar et al., 2011). Teacher trainers/educators and schoolteachers can also benefit from a number of opportunities through such partnerships, for example, access to classroom spaces, mentoring opportunities, research collaboration, and professional development opportunities (see Muzaffar et al., 2011; Van Velzen et al., 2009).

3.2.3 Institutional Level

At the institutional level, Muzaffar et al. (2011) argued that adequate infrastructure and resources are imperative for the effective implementation of pre-service teacher education programs because they provide the necessary support for the programs to function effectively. They may include, for example, varied high-quality learning facilities, well-stocked libraries, teaching and learning materials, and sufficient qualified human resources (Muzaffar et al., 2011). In line with this view, reform efforts in teacher education in many education systems have been made to upgrade academic facilities, educational resources, and qualifications of faculty and support staff (Dilshad & Iqbal, 2010; Rajput & Walia, 2001). In addition to adequate infrastructure and resources, Muzaffar et al. (2011) suggested that CPD opportunities for teacher trainers/educators should be ensured and that professional learning communities between different schools and teacher education institutions should be developed. This will contribute to ensuring that teacher trainers/educators remain up-to-date with educational theories and best instructional practices and are competent in implementing effective pre-service teacher education programs (Muzaffar et al., 2011; Tyagi & Misra, 2021).

3.3 The Role of Teacher Knowledge in Teaching

Despite some skeptical discussions over the status of teaching as a full profession (see, for example, Guerriero, 2017; Price & Weatherby, 2018) due to its lack of a common body of knowledge (i.e., professional expertise), the acknowledgment of teaching as a knowledge profession or teachers as knowledge professionals

appears to be increasingly well-received (Ulferts, 2021). With this acceptance, the critical role that teacher knowledge plays in teaching becomes crystal clear. From subject matter knowledge to pedagogical knowledge to other important knowledge domains, such as PCK and knowledge of educational contexts, all are crucial to effective teaching and student learning (Grossman & Richert, 1988; Grossman, 1990; Shulman, 1987). In a broad sense, education systems benefit greatly from teachers who possess strong subject matter knowledge and knowledge of how to teach effectively (Schleicher, 2012).

3.3.1 Subject Matter Knowledge

As regards subject matter (content) knowledge, research has long advocated that teachers' content knowledge contributes significantly to teaching effectiveness (Ball, Thames, & Phelps, 2008; Kosnik & Beck, 2009; Kultsum, 2017; Poulson, 2001; Tatto, 2008). It enables teachers to understand and explain complex concepts, produce engaging and relevant lesson plans, and provide appropriate feedback to students' questions (see Bold et al., 2017; Lappan, 1999). In addition, teachers with strong subject matter knowledge can better identify and address misconceptions and connect the material to real-world examples and applications (see Chen et al., 2020; Jadama, 2014). Furthermore, teachers with deep subject matter knowledge are better equipped to provide a challenging and stimulating learning environment that encourages curiosity and motivates students to explore and learn independently (Lappan, 1999).

3.3.2 Pedagogical Knowledge

Pedagogical knowledge, which is referred to as “the specialised knowledge of teachers for creating effective teaching and learning environments for all students,” is another critical component of teachers’ knowledge base for teaching (Guerriero, 2013, p. 2). More research has revealed the relationship between this knowledge and effective teaching and student achievement (Guerriero, 2013; 2017; Tatto, 2008; Ulferts, 2021). Ulferts (2021) called this knowledge “a main pillar of teacher professionalism” (p. 14). In teaching, teachers with strong pedagogical knowledge can differentiate their instruction to meet the diverse needs of students, such as different ages, educational backgrounds, and skill levels, through various teaching methods and techniques to engage them in the learning process (Guerriero, 2017; Kultsum, 2017). Moreover, teachers’ pedagogical knowledge vis-à-vis learning assessment and evaluation, combined with their content knowledge, helps them to design effective assessments that accurately measure student learning and use assessment information to inform their teaching (Herman et al., 2011; Leijen, 2022).

3.3.3 Pedagogical Content Knowledge

Pedagogical content knowledge (PCK), which was first conceptualized by Lee Shulman and considered a special form of professional understanding of teachers, plays a critical role in teaching (Guerriero, 2017; Kultsum, 2017; Magnusson et al., 1999; Ulferts, 2021). PCK “represents the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction” (Shulman, 1987, p. 8). By and large, teachers who possess strong PCK are able to transform subject matter content into forms that

can be easily understood by students (Park & Oliver, 2008). In other words, teachers with strong PCK have a deep understanding of the content they teach and can present it in engaging and understandable ways for students. Moreover, they understand how to break down complex concepts into smaller, more manageable chunks and how to use real-world examples and applications to make content more engaging and relevant to students (Read & Kaiser, 2020).

3.3.4 Knowledge of Context

As important as other knowledge domains, teachers' knowledge of educational contexts concerning students, community expectations, culture and traditions, and relevant education policies has a critical role in teaching and learning (Feldman & Herman, 2015; Grossman, 1990; Knowles, Squire, & Cole, 1999; Shulman, 1987). A good understanding of such contextual factors allows teachers to tailor their instruction and support to meet their students' diverse needs and experiences and ensure it is well-aligned with the relevant policies at both school and national levels (see Grossman, 1990; Mavuru & Ramnarain, 2018). Feldman and Herman (2015) advocated that effective teaching is context-based, rejecting the one-size-fits-all approach; thus, teachers' contextual knowledge is important to create a responsive, inclusive, and welcoming environment for all students. Considering technology as a constantly evolving phenomenon, teachers' contextual knowledge may also include awareness of available technological tools and their applications in educational settings (Mishra, 2019). Such knowledge can potentially be utilized to support student learning and enhance the teaching process (Murati & Ceka, 2017; Raja & Nagasubramani, 2018).

Given the crucial role of these knowledge domains in effective teaching and learning, one focus of the present study is to understand how the 12+2 teacher training program in Cambodia is perceived to develop these knowledge domains of pre-service primary school teachers. This is an area that relatively little is known about following the introduction of a number of key policies, frameworks, action plans, and programs in recent years.

3.4 Issues in Teacher Education

Teacher education is a complex and constantly evolving field, with a variety of issues affecting the quality of teacher preparation programs and the ability of teachers to respond to the diverse needs of students in today's fast-changing educational landscape. Some of the most common issues include inadequate funding and resources, difficulties recruiting highly qualified and motivated teacher candidates to enter pre-service teacher education programs, insufficient preparation of pre-service teachers, lack of induction support for new teachers, limited CPD effectiveness and opportunities for teachers and teacher educators, and issues around equity and inclusion.

3.4.1 Inadequate Funding and Resources

One of the pressing issues in teacher education is the lack of funding and resources, especially in low- and middle-income countries (see, for example, Dilshad, 2010; Tahira et al., 2020; Tandon & Fukao, 2015; Taylor & Robinson, 2019). The lack of funding has led to teacher education institutions being poorly equipped and unable to facilitate the necessary facilities and resources to support

the effectiveness of teacher preparation programs as well as the continuing education of in-service teachers (Association for the Development of Education in Africa, 2016; Tahira et al., 2020; Taylor & Robinson, 2019). Due to the limited funding and resources, some low- and middle-income countries rely on assistance from international development agencies or organizations; however, such support is often unsustainable (Martin, 2018; UNESCO, 2023b). For example, teacher education programs in Cambodia rely significantly on financial and technical assistance from international development partners, including, among others, the Global Partnership for Education (GPE), JICA, UNICEF, UNESCO, and VVOB.

3.4.2 Difficulties Recruiting Qualified Teacher Candidates

Getting the right individuals into teacher preparation programs is key to developing high-quality teachers (Darling-Hammond et al., 2010; Education Commission, 2019). However, many education systems face difficulties recruiting and attracting highly qualified and motivated teacher candidates to enter pre-service teacher education programs (Taylor & Robinson, 2019; UNESCO-International Institute for Capacity Building in Africa [IICBA] et al., 2017). In many developing countries, the difficulties are attributed to the perceived low social and financial status of the teaching profession and work intensification (see Moon, 2013; Sot et al., 2022; Tandon & Fukao, 2015; World Bank, 2009). The difficulties are also associated with the failure of the education system itself. As Taylor, Deacon, and Robinson (2019) reported, underperforming education systems were only able to produce too few qualified candidates to build a new cohort of a strong teaching workforce. In some countries, minimum requirements are adopted to attract teacher candidates and respond to supply needs, while in some other contexts, leveling up

entry requirements is not viable as they already have constraints with teacher recruitment (UNESCO, 2023b). Due to the inability to meet the demand for teacher supply, many developing countries have utilized contract teachers (non-civil servants) who generally have inadequate academic qualifications and pedagogical training (Fyfe, 2007; UNESCO, 2020). Globally, the OECD's Teaching and Learning International Survey (TALIS) report involving 48 countries and economies called for a need to make the teaching profession financially and intellectually attractive in order to get the best and brightest individuals into the profession (OECD, 2018a).

3.4.3 Insufficient Preparation of Pre-Service Teachers

Another critical issue in teacher education is that pre-service teachers are often insufficiently prepared to take on the job in the real world. Several factors contribute to this issue, including, among others, lack of clinical practice, short training duration, limited technology integration, shortage of qualified teacher trainers/educators, and misalignment of teacher preparation programs with national curricula/education policies (see Education Commission, 2019; Goktas, Yildirim, & Yildirim, 2009; Martin, 2018; Martinovic & Zhang, 2012; Popova et al., 2019; Taylor & Robinson, 2019; UNESCO, 2023b; Westbrook et al., 2013). While extensive clinical practice in real-world classroom settings is prescribed as vital to high-quality teacher education (Darling-Hammond et al., 2010), teacher education programs often place too much emphasis on teaching theory and fail to provide pre-service teachers with sufficient classroom experiences (see Korthagen, 2010; Pich, 2017; Tahira et al., 2020; Taylor & Robinson, 2019). It was also reported that many teachers in low- and middle-income countries fell short of the required

subject matter knowledge to teach due to the relatively short training they received (UNESCO, 2023b). In addition, pre-service teacher education programs often struggle to integrate information and communication technology (ICT) into their curriculum because of inadequate ICT infrastructure and resources, as well as the limited ICT knowledge of teacher trainers/educators (Goktas et al., 2009; Martinovic & Zhang, 2012; van Aswegen, Elmore, & Youngs, 2022). This constraint leaves pre-service teachers less prepared to immerse themselves in the use of technologies to support their teaching and student learning. Apart from that, in developing countries, teacher trainers/educators who play a crucial role in the education of pre-service teachers are often not sufficiently qualified due to limited classroom experience and pedagogical training at the level they teach (Education Commission, 2019). Moreover, it has been observed that some teacher education programs are not aligned with national curricula or education policies (Westbrook et al., 2013). This can result in a disconnect between the skills and knowledge taught to pre-service teachers and the actual needs of the classroom.

3.4.4 Lack of Induction Support for New Teachers

Convincing research evidence has suggested that effective induction programs help new teachers to transition smoothly into their new roles and are key to retaining new teachers (Kelley, 2004; Schwille et al., 2007; Sheldon, 2022; UNESCO, 2015a). However, many education systems suffer from the loss of teachers within the first three to five years due to the lack of effective induction support during their early years (World Bank, 2009). For example, in Cambodia, formal induction for new teachers was found to be non-existent (Sot et al., 2022). In economic terms, the costs of teachers leaving during their early years are

significant (Clandinin et al., 2013). It has been advocated that even after some years of pre-service training, usually one to four years, new teachers tend to have “a wide array of special needs that are difficult to meet” (World Bank, 2009, p. 3). Therefore, they need support from well-experienced teachers, school administrators, and other concerned stakeholders in adjusting to the realities of the classroom, developing effective teaching practices, accessing varied resources, building professional relationships, and developing an understanding of the culture and expectations of their schools (Schwille et al., 2007).

3.4.5 Limited CPD Effectiveness and Opportunities

As part of the continuum of learning to teach, teachers and teacher educators need to keep learning through CPD activities in order to stay current with best practices and new developments and upgrade their knowledge and skills to meet the changing classroom needs (Craft, 2000; Guskey, 2000; Muzaffar et al., 2011; Tyagi & Misra, 2021). CPD opportunities for teachers and teacher educators appear to exist in many education systems in various forms and structures (see Association for the Development of Education in Africa, 2016; Barrera-Pedemonte, 2016; Darling-Hammond et al., 2017; Popova et al., 2019; Taylor et al., 2019). However, CPD available to them seems to be limited, and its effectiveness varies significantly. Particularly in developing countries, CPD opportunities are available on an ad hoc basis, often delivered in a one-off workshop and cascade manner, and irrelevant to classroom contexts (see, for example, Education Commission, 2019; Kheang et al., 2018; Taylor et al., 2019). Moreover, some CPD programs lack monitoring and follow-up support and cannot be sustained due to heavy reliance on external support – technically and financially (No & Sok, 2022; Popova

et al., 2019). CPD with such characteristics does not lead to significant changes in teachers' classroom practices or student learning.

3.4.6 Issues Around Equity and Inclusion

Often less discussed is the wicked issue around equity and inclusion in teacher education, which can perpetuate systemic barriers and biases in the education system. Some teacher education programs do not prepare future teachers to treat vulnerable or underrepresented students effectively, for example, students with disabilities/special needs, students from ethnic communities, and students from low socioeconomic families who often face greater challenges in their learning (UNESCO, 2023b). This shortcoming has triggered teacher education reforms to support inclusive education in more and more countries (Donnelly & Watkins, 2011; Florian & Camedda, 2020; Jane Burke & Whitty, 2018). Also, teacher recruitment does not always address equity among underrepresented groups, failing to actively recruit a diverse pool of teacher candidates to build a more culturally responsive and equitable teaching workforce to meet the diverse needs of students (UNESCO, 2023b). Having a diverse teaching workforce that can work in disadvantaged areas and with underrepresented student populations is vital because evidence has suggested that teachers who share social characteristics with their students, including cultural and social backgrounds, positively impact student learning (UNESCO, 2014).

In Cambodia, as previous studies and reports have unveiled, primary school teacher education faces numerous issues similar to those highlighted above. However, there is still a limited understanding of what remains to be addressed

following the implementation of key policies, frameworks, action plans, and programs in recent years. Thus, one focus of the present study is to discern contemporary challenges impeding the effective provision of primary school teacher education in Cambodia, with an emphasis on both pre-service teacher education and in-service teacher education/CPD.

3.5 Teacher Policy: A Global Perspective

Teachers are considered the most crucial resource in the educational process. They have the most influence on student achievement, which has been found to correlate with economic and social development (see OECD, 2015; Tatto & Menter, 2019; World Bank, 2013). That is why teacher policy plays a vital role in shaping the education system and the quality of education that students receive (UNESCO, 2015a). Teacher policy refers to the laws, regulations, and policies governing teachers' training, hiring, evaluation, compensation, professional development, and school governance (see OECD, 2018b; World Bank, 2013). It, therefore, lays out the framework that determines the quality of prospective teachers and teachers serving in the education system. However, the development of teacher policy is unique to specific contexts because different contextual factors, such as historical, socioeconomic, cultural, and political factors, as well as alignments with other national/local policies, need to be holistically considered (Stuart & Tatto, 2000; UNESCO, 2015a).

While cautioning against contextual factors, international efforts have been made to identify key dimensions that are considered crucial to developing a comprehensive teacher policy. For example, the SABER core team members at

the World Bank identified ten dimensions for teacher policy development: (1) requirements for entering and remaining in the teaching profession, (2) initial teacher preparation, (3) recruitment and employment, (4) teachers' workload and autonomy, (5) professional development, (6) compensation: salary and non-salary benefits, (7) retirement rules and benefits, (8) monitoring and evaluation of teacher quality, (9) teacher representation and voice, and (10) school leadership (World Bank, 2013). The 'Teacher Policy Development Guide' developed by UNESCO also identified several dimensions considered most important for a teacher policy to address. They included (1) teacher recruitment and retention, (2) teacher education (initial and continuing), (3) deployment, (4) career structures/paths, (5) teacher employment and working conditions, (6) teacher reward and remuneration, (7) teacher standards, (8) teacher accountability, and (9) school governance (UNESCO, 2015a). The following subsections discuss in turn the nine dimensions of teacher policy identified by UNESCO (2015a) from a global perspective.

3.5.1 Teacher Recruitment and Retention

This dimension is an underlying aspect of any teacher policy (UNESCO, 2015a). It involves setting requirements for entry into the teaching profession and retention in it. These requirements can be influenced by a number of factors, including politics, the interest placed in the quality of teachers and the social status of the teaching profession, and others (World Bank, 2013). While strict requirements can be an indication of teacher quality, many education systems face a great challenge of teacher supply (Schleicher, 2012). Therefore, regulating requirements for entering and remaining in the teaching profession must take into account the qualitative

and quantitative needs of specific contexts (UNESCO, 2015a, World Bank, 2013). It is also important to consider whether or not teaching is an attractive profession in particular contexts because, in many cases, competition with other potential careers among highly competent individuals is on the rise (Tatto, 2008). The experience of high-performing school systems suggests that getting the right individuals into the teaching profession is among the key factors that matter the most (Darling-Hammond et al., 2010). Thus, the key question is that with its available resources and policy intent, how can a government attract academically competent and talented individuals to enter the teaching profession and retain them within the system? This is closely related to other dimensions of teacher policy that need to be considered collectively.

3.5.2 Teacher Education (Initial and Continuing)

As part of the continuum of learning to teach, teacher education involves three integral stages: pre-service/initial teacher education, induction, and CPD/in-service training (UNESCO, 2015a). While pre-service teacher education curricula should be tailored to meet specific contexts and help prospective teachers develop theoretical knowledge and gain extensive teaching practice, pre-service teacher education is usually planned as part of the teacher recruitment strategy (see Muzaffar et al., 2011; UNESCO, 2015a). It is crucial that talented individuals can be identified and recruited to receive the initial teacher training (UNESCO, 2013). However, being too selective may result in teacher shortages, so an appropriate balance must be given depending on actual circumstances (Tatto, 2008; World Bank, 2013). Different education routes allowing interested individuals to become teachers, training infrastructure and resources, and professional development of

teacher trainers/educators are also important considerations in pre-service teacher education (World Bank, 2013). After successful completion of the pre-service teacher education program, whether or not there is a probationary period during which newly qualified teachers need to satisfactorily complete before obtaining teaching certification or licensing, an induction program to support new teachers in navigating their early years of teaching is necessary (UNESCO, 2015a). During the induction period, new teachers receive mentorship from experienced teachers, have access to varied resources, develop an understanding of the culture and expectations of their schools, and build a network of colleagues who can offer support and guidance as they navigate their new role (Schwille et al., 2007). Once the induction phase is concluded, another phase of teacher learning follows and carries on throughout the teaching career, namely CPD. CPD is integral to the teaching profession because it helps teachers stay up-to-date with new teaching practices, curriculum changes, and fast-emerging technologies. In broad terms, CPD allows teachers to enhance the knowledge and skills they need to be effective in the classroom, leading to better student learning outcomes (Craft, 2000; Guskey, 2000). In relation to CPD, the World Bank (2013) raised a number of fundamental considerations for any teacher policy to address, including providers of CPD, funds for CPD, and CPD-related roles and policies. Therefore, CPD should be well-planned, promoted among teachers, and incorporated into any benefit framework for teachers (UNESCO, 2015a).

3.5.3 Deployment

This dimension of teacher policy involves the process of assigning and placing teachers in schools and classrooms. Whether it is a centrally managed or school-

based system, a teacher deployment strategy needs to ensure that qualified teachers are placed in the schools and classrooms where they are needed most; at the same time, the preferences of both teachers seeking deployment and schools seeking teachers need to be carefully considered (UNESCO, 2015a). In countries, especially developing ones, where teacher deployment policies are weak, teachers are often resistant to being placed in disadvantaged areas as they tend to encounter more challenges (UNESCO, 2010). Therefore, promising teacher deployment policies need to include incentive packages (e.g., additional salary, free accommodation, etc.) to encourage teachers to teach in such areas (Darling-Hammond et al., 2010; Thomas, 2016; UNESCO, 2015a). Teacher deployment also needs to consider teachers' right to family life and allow teachers to exercise the necessary responsibilities for their families (UNESCO, 2015a). Many studies have supported that effective deployment of teachers can contribute to mitigating inequality gaps (e.g., qualified teachers are evenly distributed across all schools despite geographical locations) and reducing teacher turnovers (see, for example, Nyatsikor et al., 2020; Thomas, 2016; Wei, Zhou, & Liu, 2020).

3.5.4 Career Structures/Paths

This dimension of teacher policy concerns diversified career structures/paths that allow teachers to progress and develop throughout their teaching careers. A good career structure/path provides teachers with multiple career options to progress horizontally or vertically and offers financial and non-financial benefits to encourage career progression (UNESCO, 2015a). A clear career structure/path plays a critical role in making the teaching profession more attractive to competent individuals, keeping teachers motivated and committed, and reducing teacher

mobility/turnover (Meak et al., 2021; UNESCO, 2013). This is crucial in building a strong teaching force of highly competent, skilled, and experienced teachers who are able to enhance student learning experience and attainments (UNESCO, 2015a).

3.5.5 Teacher Employment and Working Conditions

This teacher policy dimension deals with various considerations about establishing a conducive working environment for teachers. It is vital because the environment in which teachers work can create either stress or support that can affect teachers' performance and motivation (World Bank, 2013). Studies have also shown that working conditions directly influence teacher turnover and are highly predictive of teachers' intended leaving (see, for example, Kaniuka & Kaniuka, 2019; Ladd, 2011). Regarding this dimension, World Bank (2015) proposed that a teacher policy should endeavor to achieve three goals: (1) "produce the highest levels of professional teaching and job satisfaction," (2) "focus on core teaching and learning responsibilities," and (3) "maximize teacher effectiveness, as measured by learning achievements or outcomes" (p. 23). Therefore, several factors need to be considered carefully, including, among others, work hours and workload, teachers' autonomy and well-being, class sizes and student-teacher ratios, school infrastructure and educational resources and materials, and student behavior control (UNESCO, 2015a).

3.5.6 Teacher Reward and Remuneration

This is one of the most vital dimensions of any teacher policy. This dimension

covers a full range of considerations in terms of salary and non-salary benefits as compensation for teachers' work and is likely to affect teacher recruitment, retention, development, motivation, and effectiveness (UNESCO, 2013; UNESCO, 2015a, World Bank, 2013). In relation to this, UNESCO (2015a) made a significant point:

Salary is a key factor (although not the only one) in the success of high performing education systems. Where teacher salaries do not reflect the levels of education, training and responsibilities required, or allow teachers to live decently without taking on second jobs, the teaching profession loses prestige, adversely impacting on recruitment, motivation and retention. (p. 24)

Moreover, international comparisons across different education systems using Programme for International Student Assessment (PISA) data revealed that where teachers were lowly paid in comparison to other professions requiring similar qualifications, teacher supply seemed to be quite price-elastic (Schleicher, 2012). It was also found that average student performance correlated with the pay levels of teachers (Schleicher, 2012). To decide salary levels for teachers, UNESCO (2015a) suggested that four key aspects should be considered: (1) "national income levels – usually measured in gross domestic product (GDP) per capita," (2) "minimum living standards in very poor countries," (3) "comparator professions: professions requiring similar qualifications, length of training, knowledge, skills and responsibilities," and (4) "education authorities' fiscal or revenue capacity" (p. 24).

3.5.7 Teacher Standards

This dimension of teacher policy concerns a set of guidelines that provide clear

expectations of what teachers should know and be able to do to be effective in the classroom and achieve a desirable level of performance (UNESCO, 2015a). They also serve as a guide for pre-service teacher education, CPD programs for teachers, and evaluation of teacher performance (see Goh, 2012; Ingvarson, 1998). Justified by the argument that such standards contribute to raising teacher quality, teacher standards have been developed and implemented globally as a means to address deficits in education (Call, 2018). As observed by UNESCO (2015a), a rising number of countries are developing teacher standards for their own education systems, which in most cases consist of similar components such as “strong subject matter knowledge, pedagogical skills, knowledge about learners, skills to plan instruction, assess student learning, manage learning environment and the capacity to continue developing” (p. 25).

3.5.8 Teacher Accountability

While teachers are expected to be accountable for their teaching and do their best to ensure a high-quality education for students, education systems should also be accountable for providing teachers with the necessary support and working conditions that allow them to be effective in the classroom (UNESCO, 2015a; World Bank, 2013). Therefore, ensuring teacher accountability should be part of a more comprehensive policy and should not place teachers at risk of being inculpated for all the problems an education system faces (UNESCO, 2015a). Monitoring and evaluating teacher quality (e.g., performance appraisal, inspection) is a core part of teacher accountability that should be thoroughly planned and implemented. Teacher performance should regularly be appraised to define their strengths and weaknesses and inform areas of their professional development

(UNESCO, 2015a; World Bank, 2013). Teacher performance results should be utilized to provide additional support to underperforming teachers, incentivize high-performing teachers, and dismiss teachers who repeatedly demonstrate poor performance even after receiving significant support (World Bank, 2013). However, teacher policy focusing on teacher accountability should be attentive to high-stakes accountability practices as they can constrain “the capacity for teachers to exercise professional discretion” (Holloway, 2020, p. 3). Empirical evidence has also suggested that high-stakes accountability practices have adverse effects, including making the teaching profession less enjoyable due to reduced autonomy and job satisfaction, creating intense pressure for teachers to meet high-standard performance criteria, and causing decreases in teacher supply (Kraft et al., 2019; 2020).

3.5.9 School Governance

This dimension of teacher policy concerns the critical role of school leadership and other stakeholders in school and teacher management, particularly in setting direction and policies for the school. Effective school leadership has become a priority in many education-related policies across different education systems, as it is evidenced to define school outcomes by impacting teachers’ motivations, capacities, and the environment in which they work (Beatriz, Deborah, & Hunter, 2008). Therefore, teacher policy must consider different aspects concerning school leadership, such as the identification, recruitment, and retention of highly motivated and talented school leaders; initial training and CPD for school leaders; and regular performance evaluation of school leaders (UNESCO, 2015a; World Bank, 2013). Moreover, teacher policy should also address how other school

stakeholders, for example, parents, education associations, community members, and local and national education authorities, can get involved in holding schools accountable for their performance and creating a conducive environment for good quality education (UNESCO, 2015a).

3.6 Continuous Professional Development of Teachers

3.6.1 What is CPD for Teachers?

CPD for teachers has gained growing interest for many years as a significant way to support the enhancement of teachers' knowledge and skills in response to a rapidly changing world (Craft, 2000). Guskey (2000) argued that "Every successful instructional improvement program, curriculum revision project, school restructuring design, or systemic reform initiative has at its center the provision of high-quality professional development" (p. 4). Hence, CPD has become an integral part of the teaching profession.

In the literature, many CPD-related terms, such as "teacher development, in-service education and training (INSET), staff development, career development, human resource development, professional development, continuing education and lifelong learning,"⁵ are found (Bolam & McMahon, 2004, p. 33). However, they often have overlapping meanings and are often used interchangeably with CPD (see Bolam & McMahon, 2004; Craft, 2000). Unfortunately, the definition of these terms can vary among different writers (Bolam & McMahon, 2004). Focusing on the learning outcome of students as the ultimate goal, Guskey (2000) views CPD

⁵ In this dissertation, these terms are regarded as the same as CPD.

as “those processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they might, in turn, improve the learning of students” (p. 16). Likewise, Day and Sachs (2004) defined CPD as “a term used to describe all the activities in which teachers engage during the course of a career which are designed to enhance their work” (p. 3). Craft (2000) sees CPD as all types of professional learning activities undertaken by teachers beyond the point of their initial training, which have as one of its aims the improvement of student learning.

Extensive reviews of the literature and evidence from empirical studies have established that CPD designed to enhance teachers’ knowledge and skills for their day-to-day classroom teaching and foster positive attitudes and perceptions toward their professional confidence directly influences student learning achievement (Desta, Chalchisa, & Lemma, 2013; Holloway, 2006; Yoon et al., 2007). According to the Organization for Economic Cooperation and Development [OECD] (2005), student achievement is most influenced by the quality of teachers, so enhancing teachers’ performance through CPD is also most likely to raise students’ learning performance. To put it simply, CPD is intended to improve teachers’ performance in a view that the enhanced performance of teachers will, in turn, improve students’ learning outcomes.

A variety of activities can be considered CPD. They range from formal to informal and structured to unstructured activities. Craft (2000) gives a range of CPD activities which include, but are not limited to:

- peer teaching
- professional discussions or team meetings
- reflective practice
- being a mentor or mentee
- school cluster projects involving collaboration, development, and sharing of experience or skills
- attending school-based and off-site courses of various lengths
- conducting action research
- membership of professional groups, and
- self-directed learning (reading, searching, personal records, etc.).

From this list, CPD activities can be work-based learning, professional activities, formal education leading to specific degrees, or self-directed learning. Traditionally dominated by a one-off workshop style, approaches to CPD have significantly evolved in terms of how it is organized and the methods it is used (Craft, 2000).

3.6.2 Impact of CPD

Many empirical studies and reviews of the literature have provided evidence that high-quality CPD programs, for example, those that demonstrate the features identified by Darling-Hammond et al. (2017) or Garet et al. (2001), positively impact teaching and student learning.

Brown et al. (2001) carried out a study as part of the Local Government Educational Research Program in England. The study occurred over a period of more than a year and involved different stages, including a review of available

literature, exploratory visits and telephone discussions, questionnaire surveys, and case study interviews. One of their investigations was the impact of CPD activities on teaching and student learning. Their examination of teachers' views showed that teachers' involvement in CPD led to several impacts on their teaching, including changes in teaching styles, improved teaching confidence, changes in the use of resources, and improved planning and assessment, among others. Regarding the impact on students, teachers noticed that because of their involvement in various CPD activities, students achieved better grades, demonstrated more enthusiasm toward schoolwork, showed better social interaction, and had better self-esteem.

Another study by Hustler et al. (2003) examined teachers' perceptions of CPD. One aspect of their study focused on the impact of CPD on teaching and learning. The participant teachers were asked to rate the extent to which their CPD experience influenced their teaching and student learning over the past five years. General professional development and improved teaching skills were considered a significant impact of CPD by a large proportion of teachers, followed by enthusiasm to keep learning, improved learning outcomes of students, and self-confidence/esteem.

Based on a systematic review, Cordingley et al. (2003) examined whether and how collaborative CPD impacted teaching and learning. Their review found that collaborative CPD had a significant connection with the enhancement of teaching and learning. For teachers, collaborative CPD improved their teaching confidence and beliefs, boosted their desire to work collaboratively with other teachers,

enhanced their commitment to new practices, and improved their knowledge and practice. For students, the participation of teachers in collaborative CPD activities resulted in improved student motivation and performance, better responses to specific subjects and organization of work, and enhanced learning strategies and activities.

Results from the OECD Teaching and Learning International Survey (TALIS) 2013, which involved 35 educational systems, also indicated that high-quality CPD activities had significant relationships with changes in teachers' teaching practices (Barrera-Pedemonte, 2016). Many other studies have also demonstrated that teachers' involvement in CPD activities has a positive impact on their professional knowledge and instructional skills, teaching confidence and self-esteem, classroom management, students' achievements in the long term as well as overall school effectiveness (see Desimone et al., 2002; Holloway, 2006; Powell et al., 2003; Smith, 2015; Yoon et al., 2007).

3.6.3 Some Major Models of CPD

The interest in teachers' CPD has grown globally as a critical approach to improving student academic attainments through enhanced knowledge and skills of teachers and changes in their classroom practices. Various models of teachers' CPD are used to serve different purposes with their potential outcomes in a variety of contexts and can be identified in the literature (Kennedy, 2014). What follows are some major models of teachers' CPD, and each model is briefly explained.

The training model

Despite some criticisms against this traditional model of CPD, the training model continues to be a dominant approach to teachers' CPD (Kelly & Williamson, 2002). It usually involves external presenters or trainers with particular expertise and teachers who attend scheduled sessions (Garet et al., 2001; Kelly & Williamson, 2002). Even though the training is usually delivered outside the school setting, it can also occur within the school where teachers work (Kennedy, 2014). According to Kennedy (2014), this approach to CPD "supports a skills-based, technocratic view of teaching whereby CPD provides teachers with the opportunity to update their skills in order to be able to demonstrate their competence" (p. 338).

However, one main criticism leveled at the training model is that it places teachers in a passive position and fails to connect, to some extent, the teachers' learning experience to their regular work (Kelly & Williamson, 2002; Kennedy, 2014). Garet et al. (2001) also raised a similar criticism of such a traditional model of CPD provision, although it is pretty common. They pointed out that traditional forms of CPD, such as workshops, training courses, and conferences, "are widely criticized as being ineffective in providing teachers with sufficient time, activities, and content necessary for increasing teacher's knowledge and fostering meaningful changes in their classroom practice" (p. 920).

The deficit model

Kennedy (2014) situated this model within the context of performance management in which CPD activities can be delivered to respond to the perceived

performance deficit of teachers identified in their performance management records. Reeves et al. (2002), who also related teacher professional development to performance management, viewed performance management as a means of improving the practices of both teachers and schools. Thus, information from teacher performance management can be utilized to support CPD provision in filling the performance gap of teachers. However, as Kennedy (2014) and Reeves et al. (2002) emphasized, the underperformance of individual teachers cannot be separated from institutional contexts and practices. Therefore, the deficit model of teachers' CPD may be subject to criticism as it fails to recognize the collective responsibility of the entire institution. As Kennedy (2014) argued, "This argument is clearly at odds with the notion of the deficit model which attributes blame for perceived underperformance on individuals and fails to take due cognisance of collective responsibility" (340).

The cascade model

The training delivered through different layers of trainers is known as the cascade model. This model of teachers' CPD involves teachers participating in training opportunities and then passing on what they learn to other teachers (Kennedy, 2014). The cascade model has been widely utilized in contexts, especially the Global South, where there is a large-scale need for teacher professional development while the necessary resources are limited (Bett, 2016; King, 2018). The main reason for the preferred use of the cascade model is that it is cost-effective and relatively fast to reach out to a large number of targeted teachers (Bett, 2016; King, 2018).

Despite its possible potential to support teachers' skills and knowledge development as pointed out by Kennedy (2014), the cascade model is often criticized for its glaring shortcomings (Bett, 2016; Chigonga & Mutodi, 2019; Hayes, 2000; King, 2018). As Hayes (2000) put it, "The cascade is more often reduced to a trickle by the time it reaches the classroom teacher, on whom the success of curricular change depends" (p. 135). According to King (2018), there is evidence of success in implementing the cascade model; however, it is necessary to connect the training to individual school situations and ensure that the training is ongoing for both teachers and teacher trainers.

The coaching/mentoring model

It has been advocated that collaboration, sustained duration, coaching and expert support, and real-life learning contexts are among the key components of effective CPD for teachers (see Cordingly & Buckler, 2012; Darling-Hammond et al., 2017). The coaching/mentoring model embraces these features and is regarded as a potential model for teachers' CPD (Kennedy, 2014; Smith & Lynch, 2014). Although this model can be either collegiate or hierarchical within an institution, the underlying principle of this model is the meaningful one-on-one relationship between the parties involved, generally between two teachers (Kennedy, 2014). Kennedy (2014) further emphasized that the view that teachers' professional learning can occur within their school contexts and that it can be improved through regular discussion or exchange with colleagues is crucial to the coaching/mentoring model. Moreover, Cordingly and Buckler (2012) see mentoring and coaching as in-school strategies that can be tailored to enhance the effectiveness of teachers' CPD.

The community of practice model

Coined by cognitive anthropologist Jean Lave and educational theorist Etienne Wenger in their book entitled “Situated Learning: Legitimate Peripheral Participation” published in 1991, the concept of community of practice (CoP) was refined by Etienne Wenger in 1998 and since then has gained increasing attention in different sectors, although there are significant variations in its structure and function (see Grossman, Wineburg, & Woolworth, 2001; Lave & Wenger, 1991; Li et al., 2009; Wenger, 1998; Wenger, McDermott, & Snyder, 2002). Wenger et al. (2002) defined communities of practice as “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p. 4). From this definition, the concept of community of practice is deeply rooted in the social or situated learning theory, which places significant emphasis on ongoing interactions among members and informal learning processes within that community rather than planned learning activities (Kennedy, 2014; Wenger et al., 2002). As also pointed out in the early conception of Lave and Wenger (1991), learning is socially situated, and involvement in a community of practice in which any knowledge exists is something they called “an epistemological principle of learning” (p. 98). The community of practice can unarguably be a potential model for teachers’ CPD; however, as Kennedy (2014) stressed, the internalization of their learning has at its center the consciousness of the existence of such a community. It also depends largely on the voluntary commitment of individual members within the community and the development of internal leadership (Wenger et al., 2002). The role played by individual members within the community can also influence the

learning experience of other members and shape their roles and understanding of the community to which they belong (Kennedy, 2014).

The action research model

Action research is often a research methodology for teachers to gain insights into their educational practices within their classroom contexts with the aim of improving their teaching and student learning (Cohen, Manion, & Morrison, 2018). The aim of action research is in perfect alignment with CPD and thus is acknowledged as a potential model for teachers' professional learning (Kennedy, 2014). Conducting action research allows teachers to ask critical questions and reflect critically on their own practices throughout the process. They critically reflect on potential issues to be researched, deliberate on their teaching interventions, and meticulously document the outcomes of these interventions to inform their practice (Subphadoongchone, 2017). Furthermore, it is advocated that action research can have a more significant impact on practice when it is done collaboratively with teachers' communities of practice (Herbert & Rainford, 2014; Kennedy, 2014). For example, collaborative action research brings different knowledge and expertise and thus benefits everyone involved (Herbert & Rainford, 2014; Subphadoongchone, 2017). However, there can be some barriers to teachers' action research, such as their limited capacity to conduct and analyze research effectively, time constraints, and a lack of sustained commitment due to various external factors (Herbert & Rainford, 2014; Subphadoongchone, 2017). If these barriers can be diminished, as Kennedy (2014) stressed, "an action research model clearly has significant capacity for transformative practice and professional autonomy" (p. 347).

3.6.4 Effective CPD for Teachers

In an effort to discover features or characteristics of effective CPD for teachers, Professor Linda Darling-Hammond, an influential American academic figure, along with her colleagues undertook a critical review of 35 studies identified as having methodological rigor (Darling-Hammond et al., 2017). Their review identified seven distinguishing features (discussed below) that exhibit a positive relationship between CPD, changes in classroom practices of teachers, and student learning outcomes. These features substantiate many conceptions of effective CPD proposed by scholars in the field, such as those of Desimone (2009), Garet et al. (2001), Guskey (2003b), Hunzicker (2011), and Whitehouse (2011), among others.

Content focus

Effective CPD focuses on equipping teachers with subject-specific teaching strategies associated with its curriculum content within their classroom contexts (Darling-Hammond et al., 2017). This emphasis is to enhance teachers' knowledge and skills that they can effectively employ in their classrooms. Research conducted by Brown et al. (2001), Desimone (2009), Garet et al. (2001), and Whitehouse (2011) also supported the notion that effective CPD should concentrate on extending teachers' knowledge and skills that align with their classroom practices. This includes, for example, subject-matter content, classroom management strategies, how to use curriculum materials and assessment information, and an understanding of how students learn particular subjects,

among others. Hunzicker (2011) also suggested that when CPD “involves the study and application of content and pedagogy with emphasis on student learning outcomes,” CPD tends to be effective (p. 178).

In determining the CPD content, it is of utmost importance to ensure that the content is tailored to meet the learning needs of teachers. Several studies and reviews on the effectiveness of CPD, such as Brown et al. (2001), Garet et al. (2001), Guskey (2003b), Hopkins and Harris (2000), Hunzicker (2011), Muijs et al. (2004), and Whitehouse (2011), put forward the identification of teachers’ CPD needs as a vital task to be done before any CPD should take place. As Muijs et al. (2004) argued, “A key factor in ensuring effective CPD is matching appropriate professional development provision to particular professional needs” (p. 295). Hopkins and Harris (2000) also suggested that the match between teachers’ CPD needs and CPD activities is crucial in achieving positive outcomes at the school and classroom levels.

Active learning

Darling-Hammond et al. (2017) established that effective CPD incorporates active learning using adult learning theories such as the ones suggested by Trotter (2006), taking into account teachers’ experiences, interests, and needs to guide their learning and development. By utilizing adult learning theories, effective CPD is moving away from traditional approaches centered on lectures and instead embracing more interactive models closely connected to teachers’ classrooms and students (Darling-Hammond et al., 2017; Whitehouse, 2011). Darling-Hammond et al. (2017) emphasized that active learning is an ‘umbrella’ element that often

incorporates other elements such as collaboration, coaching, feedback and reflection, and the use of models and modeling.

Likewise, Garet et al. (2001) postulated four dimensions of active learning. The first dimension concerns teachers' opportunity to observe expert/experienced teachers, be observed teaching, and receive feedback. The second dimension of active learning involves planning classroom implementation with other teachers over new concepts or approaches gained from CPD experiences. The third dimension pertains to the opportunity for teachers to scrutinize student work in order to gain an understanding of their performance. Consequently, this will enable teachers to improve their skills in identifying student issues and devising appropriate lesson plans. The last dimension concerns the opportunity for teachers to conduct presentations, moderate discussions, and produce written content.

Collaboration

Effective CPD creates opportunities for teachers to share ideas, work collaboratively and collectively, and enable a learning community within their job contexts (Darling-Hammond et al., 2017). Hunzicker (2011) and Whitehouse (2011) concurred with this perspective, viewing CPD as a reflective practice grounded in collaborative efforts. Hunzicker (2011) argued that CPD becomes effective when teachers share best practices, discuss classroom issues, exchange viewpoints, and work together to address the issues. Similarly, Garet et al. (2001) asserted that CPD is most effective when designed for groups of teachers from the same school, department, or grade level. Teachers from the same school,

department, or grade level are better positioned to engage in meaningful discussions about their experiences, integrate new knowledge into their teaching practices, and revisit and refine their approaches in concert with other teachers (Desimone, 2009; Garet et al., 2001).

Use of models and modeling

Darling-Hammond et al. (2017) identified that CPD, which uses models of effective practice, can assist teachers in discerning what best practices look like. They suggested different kinds of modeling, including:

- video or written cases of teaching,
- demonstration lessons,
- unit or lesson plans,
- observations of peers, and
- curriculum materials including sample assessments and student work samples. (p. 11)

Likewise, Whitehouse (2011) contended that the relevancy of CPD to teachers may be reinforced through demonstrations or modeling of how theory can be put into real practice. Whitehouse (2011) explicated that “Teaching the theory of pedagogy without demonstrating how it can be the basis for decision making in the classroom is unlikely to either engage teachers or lead to any meaningful changes in teaching practice” (p. 6).

Coaching and expert support

Providing coaching and expert support is critical for fostering effective CPD among

teachers. According to Darling-Hammond et al. (2017), such support may include sharing specific content expertise or best practices tailored to meet the unique needs of individual teachers. Coaching and expert support may be delivered one-on-one, through workshops with groups of teachers, or via remote mentorship using available technologies. Expert support is of considerable importance when CPD is to be organized in a more conventional approach, such as training or a workshop. As Brown et al. (2001) advocated, effective CPD occurs when there are varied interactive delivery styles, relevant activities, and practical learning led by experts with substantial classroom experiences, along with the accessibility of high-quality resources. For Whitehouse (2011), external support from experts plays a vital role in providing the latest pedagogical knowledge and helping teachers to transfer the knowledge into the classroom.

Feedback and reflection

Effective CPD allows teachers to engage in the process of reflection and receive feedback on their teaching practices, which is key to adult learning theory (Darling-Hammond et al., 2017). Feedback and reflection on classroom practices may usually be done during, but not limited to, coaching and mentoring sessions. By nature, teaching is a reflective practice; it is, therefore, necessary for teachers to challenge their “personal theories of practice in safe, non-judgemental environments” by means of peer feedback, professional learning networks, research activities, and mentoring and coaching (Whitehouse, 2011, p. 7).

Sustained duration

CPD that demonstrates the above elements needs to be sustained over time (Darling-Hammond et al., 2017). Sustained CPD encourages teachers to apply what they learn from their CPD experiences in their classrooms, explore what works well, and make necessary instructional adjustments to meet their classroom contexts (Whitehouse, 2011). As Garet et al. (2001) suggested, CPD that is sustained over time is more likely to allow teachers to discuss contents, student conceptions and misconceptions, and pedagogical strategies in depth, try out new practices in their classrooms, and obtain feedback on their teaching. In addition to sustained duration, Garet et al. (2001) further argued that CPD is more likely to be effective when it is coherent, builds upon one another, and aligns with school and national policies. Hunzicker (2011) also asserted that CPD is most effective when teachers have plenty of opportunities to interact with information and ideas over several months. Hunzicker (2011) posited that “when such opportunities are related to each other as well as to school goals or state learning standards, teachers are able to see the ‘big picture’ that strengthens their motivation and commitment to the ongoing learning process” (p. 178).

3.6.5 Evaluation of CPD

In the same way as the typical learning and teaching process, teachers’ CPD needs to be regularly and thoroughly evaluated. The evaluation is to ensure its ultimate effects on classroom practice and student learning as well as the school as a whole through teachers’ enhanced knowledge and skills gained from their CPD experience. In other words, the evaluation must be an indispensable part of any CPD process and should lead to ongoing improvement, not an end in itself (Craft, 2000; Miller and Watts, 1990).

Guskey (2000) observed a growing interest in the evaluation of CPD due to four crucial reasons. The first reason concerns a better understanding of the potential nature of CPD as an ongoing process. The second reason is the recognition of CPD as an intentional and systematic process to bring about positive changes and improvements in schools. The third reason appertains to the need for reliable information to direct further reform efforts in CPD as well as educational programs at large. The last reason is the increased pressure for better school accountability.

However, evaluation practices of CPD have been observed to fall short of capturing all indicators of success or providing a comprehensive account of the impact on different stakeholders over a long period of time (Guskey, 2000; Muijs et al., 2004). As evidenced by research, Muijs et al. (2004) presented a list of shortcomings of CPD evaluation demonstrating that:

- it rarely focuses upon longer term or indirect benefits;
- it rarely differentiates between different kinds of benefits in relation to different purposes in the definition (i.e. moral purposes, relevance to phase of development, change, thinking, emotional intelligence);
- it is often based upon individual self-report which relates to the quality and relevance of the experience and not its outcomes;
- it usually occurs summatively, after the learning experience, rather than formatively, so that it can be used to enhance that experience;
- it rarely attempts to chart benefits to the school or department (possibly because these are often not explicitly contained within its purposes). (pp. 292-293)

Likewise, Guskey (2000), referring to Todnem and Warner (1994), pointed out three critical mistakes that made past evaluations of CPD inadequate and ineffective. They included: (1) a heavy focus on documentation of what was done

rather than the evaluation of its value, effectiveness, or outcomes; (2) little depth of evaluation that did not dig into significant success indicators, such as improved knowledge and skills of teachers, changes in classroom practice, or better student learning; and (3) the short life of evaluation efforts which often resulted in weaker support of change because quick evidence of improvement could not be achieved.

Therefore, CPD evaluation must be adequately planned and based on clearly defined criteria (Craft, 2000). Craft (2000) proposed a list of questions to be considered when planning CPD evaluation:

- What is the focus of your evaluation?
- What are the purposes of your evaluation?
- What questions are to be addressed?
- What information will be needed to answer your evaluation questions, and how will it be collected?
- How can you ensure your findings are credible?
- Who will be involved in your evaluation?
- What are the ground rules for your evaluation?
- Who, if anyone, will receive a copy of your evaluation findings, and what use do you intend the findings should be put to?
- What are the time, workload and other resource implications of your evaluation? (pp. 99-101)

In fulfilling the genuine purposes of CPD evaluation, it is suggested that CPD evaluation must take into account all the impacts at different levels (Guskey, 2000, 2002; Muijs et al., 2004). As Muijs et al. (2004) put it:

It is clear that evaluation practice is most useful when it explores the interrelationship between the impact on teacher, school and pupil. This interrelationship is complex but it is important to recognize that the outcomes of CPD are not solely confined to the individual. Evaluation processes should be sophisticated enough to track multiple changes and different levels of impact in relation to the orientation of CPD. (p. 293)

To achieve this sophistication of CPD evaluation, Guskey (2000) offered a framework of five critical levels of CPD evaluation that is potentially helpful in ascertaining the CPD impact at different levels.

- Level 1: Participants' reactions to CPD experiences
- Level 2: Participants' learning from CPD
- Level 3: Organization support and change
- Level 4: Participants' use of new knowledge and skills from CPD
- Level 5: Student learning outcomes

Guskey (2000) offered a justification for why it is crucial to assess each level, including questions to be addressed, how the information will be collected, what needs to be measured, and how the collected information will be utilized to guide future CPD. The five-level framework of CPD evaluation gets more complex from one level to another, and success at one level is usually a requisite for success at higher levels (Guskey, 2002).

3.6.6 Incomplete Knowledge about Effective CPD

In the area of CPD for teachers, comparative studies and reviews from around the world have been conducted to identify a list of characteristics or features of effective CPD that could support the improvement of teaching and learning (Whitehouse, 2011). Such efforts, for example, those of Brown et al. (2001), Cordingley et al. (2003), Darling-Hammond et al. (2017), and Garet et al. (2001), have undeniably shed much light on what effective CPD looks like.

However, CPD for teachers is seen as very much context-bound, meaning that what works in one context might not work in another different context. This results in what Whitehouse (2011, p. 1) called a “blurred and incomplete picture” of effective CPD. Whitehouse (2011) explained this by giving two reasons:

Firstly, teacher CPD is part of the teaching and learning environment in each country and these environments can vary widely, even between countries with similar outcomes for student attainment. Secondly, governments rarely state requirements for the form and content of teacher CPD, leading to variability in the quality of provision. (p. 1)

Guskey’s (2003b) analysis also revealed that the characteristics of effective CPD were not consistent and sometimes even contrasting. This inconsistency was attributed to the fact that the criteria to define effectiveness and contextual factors varied significantly, and the rigor of investigations was often questionable (Guskey, 2003b, 2009). Guskey (2009) emphasized that methodologically rigorous investigations of CPD effectiveness require considerable time and resources; however, inadequate planning of most CPD activities (e.g., short time, pressure for immediate results, and ineffective evaluation process) and the lack of concerted and genuine efforts from school leaders further impede sound examinations of CPD effectiveness. These shortcomings constrain our complete understanding of effective CPD, although some would argue that more validated evidence on the characteristics or features of effective CPD has continued to emerge (Guskey, 2009).

In view of this incomplete knowledge about effective CPD and the dearth of

comprehensive research into this crucial area in Cambodia – an underrepresented context, one focus of the present study is to identify the characteristics of effective CPD for in-service primary school teachers in Cambodia, taking into account the reality of their professional context constrained by limited resources and support.

3.7 Broader Literature Gap

Global knowledge production is largely dominated by the Global North – the economically more developed countries in North America, Europe, and parts of Asia such as Japan and South Korea (Canagarajah, 2002; Heng, 2022; Medina, 2014). This status quo has created global knowledge inequality between the Global North and the Global South – the countries characterized by lower levels of industrialization, human capital, and living standards in Latin America, Africa, and parts of Asia, including Cambodia (Altbach, 2003; Demeter, 2020; Heng, 2023). The field of teacher education is no exception. Even though there has been a substantive body of research into teacher education, particularly in relation to pre-service teacher education and CPD for in-service teachers, a significant portion of knowledge has emanated from Western and developed contexts, which greatly influences teacher education practices and policies in developing countries or specific Asian countries like Cambodia (Ananin & Lovakov, 2022; Dy, 2017; Saavedra & Pérez, 2018). This geographical discrepancy or bias in the existing literature on teacher education overlooks the unique sociocultural, political, economic, and historical dynamics that shape teacher education in developing countries (Muzaffar et al., 2011; Stuart & Tatto, 2000; UNESCO, 2015; Whitehouse, 2011). Therefore, unraveling how pre-service teacher education is perceived to develop pre-service primary school teachers' knowledge base for

teaching, CPD for in-service primary school teachers, and challenges confronting the effective provision of these activities in resource-constrained and underrepresented contexts such as Cambodia not only contributes to filling this literature void but also presents specific perspectives from which international comparisons can be drawn. Furthermore, such insights can also contribute to refining theoretical understanding, enhancing international development strategies, and facilitating global policy adjustments.

Summary

This chapter has given a brief overview of pre-service teacher education, emphasizing its significance in influencing initial frames of reference of future teachers and ensuring that future teachers are well-prepared to succeed in the classroom, thereby raising the quality of education. Following that, it has discussed key considerations at three levels, namely policy level, program level, and instructional level, in designing effective pre-service teacher education, which is argued to be imperative in producing teachers with a strong knowledge base for teaching. The pivotal role of teachers' key knowledge domains in teaching, such as subject matter knowledge, pedagogical knowledge, PCK, and knowledge of context, has also been presented, followed by a discussion of some common issues in teacher education. Subsequently, nine teacher policy dimensions identified by UNESCO have been examined with the relevant literature. On CPD for teachers, this chapter has addressed a number of essential topics, including its varying definitions given by different scholars, a range of activities considered CPD, and its positive impact on teaching and student learning through enhanced teacher performance. Some major CPD models have also been presented,

followed by a discussion of seven features of effective CPD for teachers and CPD evaluation, such as its growing interest, shortcomings, and practices. In the chapter, attention has also been drawn to some key factors contributing to incomplete knowledge about effective CPD. It is worth pointing out that, where relevant, the chapter has underscored specific knowledge gaps pertaining to the Cambodian context that warranted the need for this particular study. Furthermore, the chapter has concluded by highlighting the broader literature gap, emphasizing the dominance of the Global North in knowledge production, particularly within the field of teacher education, which overlooks the unique contextual factors of developing countries such as Cambodia.

CHAPTER 4: Research Design and Methodology

This chapter aims to provide detailed information about the research design and methodology employed to address the study's research questions. The chapter begins by discussing the overall research design and epistemological lens that underpin the study. It then discusses the researcher's positionality, provides a detailed account of the data collection methods, and explains the sampling technique used to select the participants. Following that, the chapter outlines how the collected data were handled and analyzed to generate the research findings for discussion. The chapter also highlights strategies followed to enhance the study's validity and reliability. Finally, the chapter discusses various ethical considerations and concludes with a summary.

4.1 Research Design

Research design serves as a blueprint for a study (Yin 2016). It provides specific directions for researchers in the course of their research projects (Creswell & Creswell, 2018). Therefore, one should select a specific research design that is most appropriate for addressing research questions or problems under investigation (Yin, 2016). With due regard to this significance, this study was meticulously designed as a case study – a popular approach in qualitative research (Hancock, Algozzine, & Lim, 2021; Woodside, 2010; Yin, 2018). Within this qualitative case study, primary school teacher education in Cambodia was regarded as the overarching case, with pre-service teacher education and in-

service teacher education/CPD as two embedded units of analysis and different geographical areas as additional layers or contexts within which the embedded units are situated (Yin, 2018). As with many other case studies, the employment of the case study design in the present study was to provide an in-depth, context-rich analysis of a specific instance, which is primary school teacher education in Cambodia, focusing on both pre-service teacher education and in-service teacher education/CPD.

Moreover, this qualitative case study was informed by the view of interpretivism – an epistemological position that stands in contrast to the belief held by positivism. In other words, interpretivism is a critique of positivism (Gray, 2004). Interpretivism refers to theories about how human beings obtain knowledge of the world, and as the name suggests, for interpretivism, knowledge relies largely upon our interpretation or understanding of meanings that human beings attach to their actions or environments (Gray, 2004; O’Reilly, 2009). Therefore, the role of the researcher cannot be separated from the study. This acknowledgment implies that interpretive research is more subjective (Alharahsheh & Pius, 2020; Diaz Andrade, 2009). Furthermore, interpretivism holds that social reality is different from natural reality; thus, a different method is required to collect and interpret data about the social world (Alharahsheh & Pius, 2020; Gray, 2004). While positivism focuses mainly on the natural world through the use of scientific methods, interpretivism is particularly interested in the social world, where “our knowledge of reality is gained only through social constructions...” (Klein & Myers, 1999, p. 69).

At its core, this case study took the qualitative stance to gain insights into the

participants' experiences under real-world conditions and capture their views and perspectives (Yin, 2016). It endeavored to gather a wide range of perceptions and perspectives from a diverse group of participants. As Creswell and Poth (2018) emphasized, qualitative researchers strive to collect multiple perspectives and meanings held by participants about the issue or problem under investigation. Qualitative researchers are generally interested in understanding how people elucidate their experiences, construct their worlds, and what meaning is the result of their experiences (Merriam & Tisdell, 2016). According to Miles, Huberman, and Saldaña (2018), findings of well-analyzed qualitative studies have a quality of undeniability because words and images "have a concrete, vivid, and meaningful flavor that often proves far more persuasive to a reader than pages of summary statistics" (p. 4).

With regard to the appropriateness of using qualitative inquiry in this case study, it is strongly argued that qualitative research is most suitable in situations where little information about a research phenomenon is available, or research variables cannot easily be measured (Creswell, 2012; Creswell & Poth, 2018; Flick, 2018; Gray, 2014; Merriam & Tisdell, 2016). Creswell (2012) explained this by offering an example of the use of sign language in distance education courses:

The literature may not adequately address the use of sign language in distance education courses. A qualitative research study is needed to explore this phenomenon from the perspectives of distance education students. Unquestionably, using sign language in such courses is complex and may not have been examined in the prior literature. (p. 16)

In the same vein, the qualitative inquiry was best suited for this case study, given

the limited research on primary school teacher education in Cambodia and the complexity of addressing the research questions through scientific inquiry favored by quantitative researchers.

4.2 Positionality of the Researcher

Discussing the positionality of the researcher, especially in the present qualitative case study where subjectivity is acknowledged and valued, is essential (Creswell & Poth, 2018; Denzin & Lincoln, 2011; Huberman & Miles, 2002; Savin-Baden & Major, 2013; Takacs, 2003). This is because the role of the researcher as the primary instrument in the study is indispensable throughout the entire research process (Merriam & Tisdell, 2016). For this reason, the personal backgrounds of the researcher, including academic, professional, and sociocultural backgrounds, could have influenced the study's overall design, analysis, and interpretations. Thus, the positionality of the researcher is discussed to provide context, acknowledge potential biases, and enhance the transparency and credibility of the study's findings.

Having served as a primary school English teacher at an NGO school and different private institutions for many years and, later, a university lecturer, the researcher has encountered the challenges of teaching subjects or areas for which the researcher felt inadequately prepared. This firsthand experience has instilled in the researcher a profound belief in the importance of strong content knowledge, even for teaching at the primary level. This belief was further amplified during the researcher's tenure at an international school with a large proportion of primary school students, where the emphasis on recruiting highly qualified teachers

showcased the undeniable link between teacher competency and students' academic, social, and emotional development.

In addition to the educational background in Cambodia, the researcher's international educational experiences in both Japan and the UK have been formative. During his time abroad, the researcher has been continuously inspired by the depth of knowledge displayed by most lecturers and professors. Their expertise made the learning process considerably more productive and resonated with the researcher's belief in the sanctity of the teaching profession.

From an academic lens, the researcher's education and research experiences in social science have oriented the researcher toward seeing knowledge creation as a process deeply embedded in social constructs. This orientation has ushered the researcher into the world of interpretivism, teaching the researcher to perceive realities as socially constructed and multifaceted. This philosophical foundation has significantly influenced the approach and design the researcher has chosen for the present study, making the researcher favor a lens that values the nuances and complexities inherent in the realm of teacher education.

Moreover, as the study was conducted within the Cambodian context, the researcher's insider knowledge presented unique advantages during the research processes, particularly in terms of intimate understanding of linguistic nuances and sociocultural awareness. This deep-seated familiarity allowed the researcher to elicit insightful responses from the participants through open interactions and effective communication in the local language. Beyond this, the researcher's

extensive networks within the Cambodian educational community provided the researcher with privileged access to pivotal documents that might remain obscured by an external researcher. These included critical resources such as the training curriculum, relevant action plans, policies, and strategic blueprints. Having access to these exclusive documents enriched the depth and breadth of the present study, offering valuable insights that would otherwise remain untapped.

Overall, these backgrounds have undoubtedly shaped the researcher's worldview, beliefs, and identity, which might have influenced the overall research design, analysis, and interpretations of the study's findings. However, the researcher has practiced reflexivity and adhered to high ethical conduct throughout the study.

4.3 Data Collection Methods

The primary data collection method for this qualitative case study was through interviews – a commonly used instrument for collecting qualitative data (Cohen et al., 2018; Johnson & Christensen, 2020; Kumar, 2019; Savin-Baden & Major, 2013). The use of interviews was to delve deep into the personal experiences, perceptions, and perspectives of the participants. Miller and Glassner (2011) argued that qualitative interviews allow researchers to gather rich information from participants' perspectives and experiences that give insights into a study. Johnson and Christensen (2020) also supported that qualitative interviews are used to “obtain in-depth information about a participant's thoughts, beliefs, knowledge, reasoning, motivation, and feelings about a topic” (p. 193). Specifically, this study employed semi-structured, in-depth interviews to allow for better flexibility in asking additional questions depending on the participants' responses. Savin-

Baden and Major (2013) see semi-structured interviews as a practical approach in particular circumstances similar to the present study. They explicated:

Semi-structured interviews are a good approach when the researcher has only one opportunity to interview someone and are also an effective technique when several interviews will be collecting data for the same project. A strength of this approach is that it allows the researcher to decide how best to use the limited time available and keeps the interaction focused. (p. 359)

Interviews for this study were conducted on a one-on-one basis. Creswell (2012) regarded one-on-one interviews as a popular approach in educational research and most suitable for interviewing articulate participants who can share ideas comfortably. Yin (2016) suggested six hints that were thoroughly followed by this study to have a successful conversation in a qualitative interview. They were speaking in modest amounts, being nondirective, staying neutral, maintaining rapport, using an interview protocol, and analyzing when interviewing.

In total, the study conducted semi-structured, in-depth interviews with 27 participants in Cambodia, of which eight were pre-service teachers (also known as teacher trainees or trainee/student teachers), 12 were in-service teachers, and seven were teacher trainers (see Table 4.1 for profiles of the research participants). Due to the ongoing community outbreak of COVID-19 and border restrictions, all interviews were carried out via Zoom calls (see Appendix A for interview protocols). Overall, the interviews lasted between 22 and 60 minutes. The interviews with pre-service teachers were notably shorter than those conducted with in-service teachers and teacher trainers, ranging only between 22 and 35 minutes. This brevity was attributed to the nature of these interviews, which

focused only on one aspect, i.e., pre-service teacher education. However, it is also important to acknowledge that several pre-service teachers struggled to understand certain parts of the interview questions. Despite attempts to support them while maintaining a comfortable atmosphere, their responses were generally brief. All interviews were conducted between January and February 2022 and recorded with the prior consent of all participants. In this study, all interview participants were identified by alphanumeric codes to protect their identities as part of the ethical conduct of scientific research. For example, the first pre-service teacher was identified by PST-01, the second in-service teacher by IST-02, and the third teacher trainer by TT-03 (see Table 4.1).

Table 4.1

Profiles of the Research Participants

Teacher Trainers (TT)					
Participant Code	Gender	Length of Service (in Years)	Teaching Subject(s)	Workplace	Interview Date
TT-01	M	6	English	PTTC	19-Jan-22
TT-02	M	5	Pedagogy	PTTC	28-Jan-22
TT-03	M	6	Mathematics	TEC	30-Jan-22
TT-04	F	25	Biology & Science	TEC	1-Feb-22
TT-05	M	7	General Knowledge	PTTC	1-Feb-22
TT-06	F	10	Home Economics & Morality-Civics	TEC	1-Feb-22
TT-07	F	14	Khmer-Methodology	TEC	14-Feb-22
In-Service Teachers (IST)					
Participant Code	Gender	Length of Service (in Years)	Teaching Grade(s)	Primary School (PS)	Interview Date

IST-01	F	8	6	PS1-Phnom Penh	16-Jan-22
IST-02	F	2	2 & 3	PS2-Kandal	20-Jan-22
IST-03	M	7	3	PS3-Kandal	21-Jan-22
IST-04	F	7	1 & 6	PS4-Kandal	22-Jan-22
IST-05	M	3	4 & 6	PS5-Kandal	24-Jan-22
IST-06	F	8	5	PS6-Kandal	25-Jan-22
IST-07	F	4	5	PS7-Phnom Penh	27-Jan-22
IST-08	M	4	6	PS8-Phnom Penh	2-Feb-22
IST-09	F	3	5	PS9-Phnom Penh	5-Feb-22
IST-10	M	6	6	PS10-Phnom Penh	15-Feb-22
IST-11	F	4	1 & 3	PS8-Phnom Penh	17-Feb-22
IST-12	F	2	3	PS11-Phnom Penh	20-Feb-22
Pre-Service Teachers (PST)					
Participant Code	Gender	Training Center		Interview Date	
PST-01	F	PTTC		4-Feb-22	
PST-02	M	PTTC		5-Feb-22	
PST-03	F	PTTC		5-Feb-22	
PST-04	M	PTTC		7-Feb-22	
PST-05	M	PTTC		10-Feb-22	
PST-06	M	TEC		10-Feb-22	
PST-07	F	TEC		10-Feb-22	
PST-08	F	TEC		11-Feb-22	

In addition to the interviews, the study collected various documents, including the training curriculum, government policies and reports, action plans, strategic plans, frameworks, NGO reports, and relevant studies, among others. Even though these documents were not analyzed to generate new findings, they played an essential role in contextualizing and corroborating the findings obtained from the interviews

in the discussion sections. These secondary sources, which were collected through network engagements and web searches, further enhanced the rigor of the study, grounding the findings from the interviews in a broader context and providing additional insights. Overall, the use of the collected documents was centered around enhancing the depth of the discussions of the findings obtained from the interviews.

4.4 Sampling Technique

Contrary to a quantitative study, where random sampling is typically employed, this study adopted a non-probability or judgmental sampling technique, namely snowball or chain referral sampling – a subtype of purposive sampling. The primary purpose behind the use of this sampling technique in this study was to deliberately select participants who could help the researcher address the research questions and were likely to have the necessary information (Cohen et al., 2018; Creswell, 2014; Kumar, 2019; Yin, 2016). Furthermore, the decision to utilize snowball or chain referral sampling stemmed from the challenge of accessing targeted participants, given the lack of a comprehensive list of those who met the study's inclusion criteria.

Participant inclusion criteria for this study were determined as follows:

In-Service Primary School Teachers:

- Must be a public primary school teacher who completed the 12+2 teacher training program and is teaching at any public primary school in Kandal province or the capital city, Phnom Penh.
- Must be in continuous service for at least two years after completing the pre-service training.

Pre-Service Primary School Teachers:

- Must be a recent graduate of the 12+2 teacher training program in 2021 from a Provincial Teacher Training Center (PTTC) or a Teacher Education College (TEC).

Teacher Trainers:

- Must be a teacher trainer who is teaching the 12+2 teacher training program for pre-service primary school teachers in any subject.
- Must be in continuous service for at least two years after becoming a teacher trainer and teaching at a Provincial Teacher Training Center (PTTC) or a Teacher Education College (TEC).

With the predetermined inclusion criteria, the researcher began by identifying a few accessible participants. After these initial participants were interviewed for the study, they were asked to refer others they knew who also met the criteria for the study. The process continued until the desired sample size was reached.

As a result, the study involved seven teacher trainers (three females, four males), 12 in-service primary school teachers (eight females, four males), and eight pre-service primary school teachers (four females, four males). The work experience of teacher trainers in this study ranged from 5 to 25 years. They taught different subjects, including English, pedagogy, mathematics, biology & science, general knowledge, home economics & morality-civics, and the Khmer language (methodology). Three of them taught at a PTTC, and four others at a TEC.

The in-service primary school teachers who participated in this study were quite diverse. Their work experience varied from two to eight years after completing their initial teacher training program, and they taught across all primary school levels (Grades 1-6). Among them, five taught at five different primary schools in Kandal province, and seven taught at six different primary schools in Phnom Penh, the capital city. Lastly, the pre-service primary school teachers were recent graduates and were about to begin their teaching profession at designated public primary schools. Five of them graduated from a PTTC, and three others from a TEC.

4.5 Data Analysis

Data analysis is a crucial process in any research. Researchers at this stage try to explore collected data and make meanings of them. In qualitative research, because the collected data are incredibly diverse and descriptive, it is required that the researchers endeavor to develop a rigorous understanding of texts, images, notes, and observations so that research problems or questions can be addressed (Creswell, 2012). Even though qualitative data are greatly diverse, they are

practically meaningful because of their forms of human communication (Gibbs, 2007). Cohen et al. (2018) argued that "there is no one single or correct way to analyze and present qualitative data; how one does it should abide by the issue of fitness for purpose" (p. 643).

Bearing this in consideration, the data analysis of this study primarily followed a linear, hierarchical approach suggested by Creswell (2014, p. 197) (see Figure 4.1). Following the selected approach, interview transcripts were thematically analyzed (i.e., thematic analysis). Thematic analysis is a common method of analyzing qualitative data (Flick, 2018; Savin-Baden & Major, 2013). This method involves identifying, analyzing, and reporting patterns found in data (Bryman, 2012).

Because interviews were conducted in Khmer, the official language spoken by the people of Cambodia, they were transcribed into English and entered simultaneously into Microsoft Word files so that they could be imported into Computer-Assisted Qualitative Data Analysis Software (CAQDAS) for analysis. The selected CAQDAS for this study was the latest version of NVivo, released in March 2020. NVivo is a commonly used software application for analyzing qualitative data. The next step was to read through all the data. The reading through all the data was to gain a general understanding of the information and reflect on its overall meaning (Creswell, 2014). After that, the data were coded using the inductive approach, allowing codes to emerge from the data itself (Saldaña, 2016). This coding process involved segmenting text data and assigning codes or phrases that describe those segments (Creswell, 2012, 2014; Johnson &

Christensen, 2020). As suggested by Johnson and Christensen (2020), only texts that were thought to contain specific meaning for the study were segmented and assigned codes.

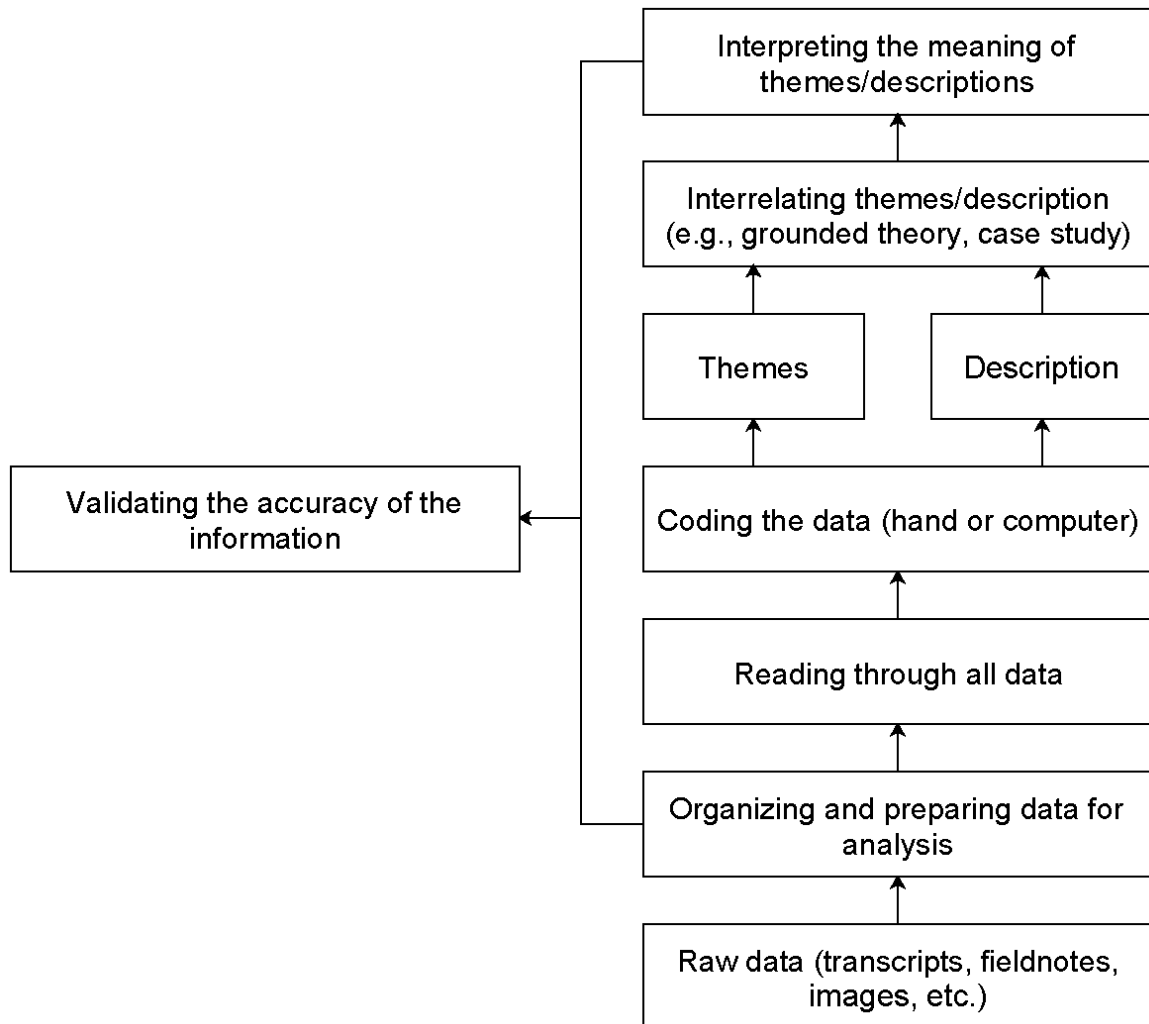


Figure 4.1 Data Analysis in Qualitative Research⁶ (Creswell, 2014, p. 197)

From the initial codes, themes and sub-themes were generated. According to Creswell (2012), themes are “similar codes aggregated together to form a major idea in the database” (p. 248). Then, themes and sub-themes were presented as key findings of the study, supported by quotations from the participants. Finally,

⁶ Reproduced from Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). USA: SAGE Publications. Copyright © 2014 by SAGE Publications. Reproduced in accordance with [SAGE's guidelines](#) for dissertation/thesis reuse.

the findings were compared and contextualized with relevant literature/studies, reports, policies, action plans, strategic plans, and frameworks to enrich, where relevant, the depth of the analysis.

4.6 Validity and Reliability

Validity and reliability are essential requirements in research regardless of the method or approach employed. Each research method has both strengths and weaknesses. However, several strategies can be followed to enhance the validity and reliability of a study. In a broad sense, Kumar (2019) sees validity as the ability of a research instrument to show that it is finding out what it is designed for and reliability as the consistency of research findings if it is to be done repeatedly. More specifically, Creswell and Crewell (2018) referred to qualitative validity as the accuracy of the research findings, whereas reliability is the consistency of the used approach among different researchers.

This study employed specific strategies and procedures to enhance its validity and reliability. It provided thick and rich descriptions of themes and sub-themes by offering many perspectives/evidence from the participants. This procedure added to the validity of the findings (Cohen et al., 2018; Creswell & Creswell, 2018). Moreover, the themes and sub-themes that emerged from the study were established based on the convergence of perspectives of different participants. This strategy also added validity to the study (Creswell, 2014; Creswell & Creswell, 2018; Gibbs, 2007). Precisely, this study analyzed data from interviews involving pre-service teachers, in-service teachers, and teacher trainers.

Furthermore, transcription of the interviews was thoroughly made and checked for accuracy, and where necessary, an official check was made with some participants to confirm their responses. This procedure contributed to the reliability of the study (Gibbs, 2007). This study also rigorously followed the ethical guidelines suggested by the literature. According to Merriam and Tisdell (2016), “ensuring validity and reliability in qualitative research involves conducting the investigation in an ethical manner” (p. 237).

4.7 Ethical Considerations

Ethical conduct is crucial in any research process, especially when it involves human participants and things that affect them. In general terms, research ethics concerns the moral principles or guidelines that constitute ethical behavior when conducting research (Cohen et al., 2018; Flick, 2018; Johnson & Christensen, 2020; Savin-Baden & Major, 2013). This study rigorously considered several ethical aspects due to the involvement of human participants, following four ethical principles suggested by Gray (2014). They were avoiding harm to participants, ensuring informed consent, respecting participants' privacy, and avoiding the use of deception.

Before the study began, ethical approval from the university's research ethics committee was granted (see Appendix B). By obtaining ethical clearance from the university, this study proved to adhere to the acceptable ethical standards of scientific research. In addition, because the study involved public educational institutions in Cambodia, approval from Cambodia's MoEYS was also pursued. A letter from the research advisor (see Appendix C), a request letter from the

researcher (see Appendix D), and the approved ethical letter from the university were submitted to MoEYS to request permission to contact the targeted educational institutions and select potential participants for the study. Official permission from MoEYS was granted on January 3, 2022 (see Appendix E).

Moreover, informed consent was received from all research participants pertaining to their voluntary participation, recording of interviews, use of collected data, and publication of research findings. First, a participant information sheet (see Appendix F) was sent to all identified participants so they could take the time to consider the information and ask questions if something was unclear to them before they decided whether or not to participate. A study consent form (see Appendix G) was then sent to those who agreed to take part for their signatures.

All participants were also ensured that their identity would be anonymized by assigning alphanumeric codes to represent them, and any personal and identifiable information related to them would be removed. Furthermore, collected data were stored securely on a password-protected antivirus computer, treated with high confidentiality, and used for this study only. All participants were also made aware that they had the right to withdraw from the study at any time during the data collection process and that their withdrawal would not result in any consequences.

Summary

This chapter has provided the rationale for utilizing a qualitative case study design to address the research questions while adhering to the stance of interpretivism

and discussed the positionality of the researcher, focusing on the researcher's academic, professional, and sociocultural backgrounds. With the aim of gaining rich insights into the research questions from the participants' experiences, perceptions, and perspectives, the chapter has justified the use of semi-structured in-depth interviews as the primary data collection method and snowball or chain referral sampling as the technique to select the participants. It has also explained the procedures taken for data analysis, including, among others, transcription of interviews, organization/preparation of data for analysis, inductive coding of the data, thematic analysis, and reporting. In addition, the chapter has outlined the strategies used to enhance the study's validity and reliability, such as providing detailed descriptions, converging perspectives from various participants, thoroughly checking transcription accuracy, and adhering to ethical conduct. The chapter has also indicated a number of ethical considerations that were strictly observed by the study. Overall, the chapter has provided a detailed account of the research design and methodology employed in the study.

CHAPTER 5: Perceptions Toward the Building of Knowledge Base for Teaching

This chapter presents and discusses key findings related to the first research question: “How is pre-service teacher education in Cambodia perceived in terms of building the knowledge base of pre-service primary school teachers for teaching?” The chapter begins with a presentation of key findings. A separate discussion section then follows in the same order as the findings. Finally, the chapter concludes with a summary.

5.1 Perceptions Toward the Building of Knowledge Base for Teaching

An exhaustive analysis of the interview data collected from pre-service teachers, in-service teachers, and teacher trainers regarding the building of pre-service teachers’ knowledge base for teaching at the primary school level through the 12+2 teacher training program yielded a number of main themes and corresponding sub-themes. These emerged from the triangulation of interview responses from pre-service teachers, in-service teachers, and teacher trainers, which were concurrently analyzed during the data analysis. Each of them is presented in the sequence shown in Table 5.1.

Table 5.1*Perceptions Toward the Building of Knowledge Base for Teaching*

Main Themes	Sub-themes	IST	PST	TT	Total Number of Participants Contributed
Content Knowledge	Little emphasis on content knowledge development	10	7	4	21
	Some core subjects receiving greater attention	2	2	2	6
General Pedagogical Knowledge	General teaching strategies and techniques	12	8	7	27
	Classroom management	8	8	5	21
	Child development and psychology	11	6	3	20
	Production of teaching materials	8	4	4	16
	Lesson planning	5	6	3	14
Pedagogical Content Knowledge	Subject-specific instructional strategies, techniques, and steps	11	8	5	24
	Understanding of curriculum materials through teaching demonstrations, observations, and practicums	6	8	4	18
	Purpose of teaching a subject	0	2	0	2
Knowledge of Context	Developed through different subjects and activities	9	7	7	19
	Basic computer skills and knowledge	8	7	3	18
	Understanding of teaching contexts	0	1	1	2
Total Number of Each Group Interviewed		12	8	7	27

5.1.1 Content Knowledge

As regards content knowledge, a common perception among most participants was that the 12+2 teacher training program placed little emphasis on building pre-service teachers' content knowledge (e.g., facts, concepts, principles, and their interrelation within the subjects) needed for instructing at the primary school level.

While concurring with the notion above, some participants conveyed that the training offered much knowledge to pre-service teachers in other areas. The comments below serve as a representation of the stance held by the majority of the participants:

In the training program, there are parts that focus on content knowledge, but in reality, content knowledge is mainly dependent on the existing knowledge of the pre-service teachers from their 12 years of general education. (IST-02)

From my experience with the 12+2 training program, I observed that the training mainly focused on teaching strategies/methods, meaning that we learn how to teach young children at the primary school level and how we transfer our knowledge to the children. (IST-05)

The training at the teacher training center offers much knowledge to pre-service teachers. However, the training focuses mainly on instructional strategies and how to teach particular subjects. (PST-04)

The training curriculum includes basic knowledge of the subjects and teaching methodology for the subjects, though the main focus is on teaching methods/strategies. (TT-05)

While little focus on developing pre-service teachers' content knowledge was consistently observed by the participants, a recurrent perception that upon joining the training program, pre-service teachers already had basic content knowledge needed to teach at the primary school level was mentioned by many participants, including pre-service teachers, in-service teachers, and teacher trainers. For them, the lack of focus on building pre-service teachers' content knowledge was attributed to this perception. Table 5.2 below highlights this point:

Table 5.2

Participants' Views on Existing Content Knowledge of Pre-Service Teachers

Participants	Illustrative Quotes
IST-09	Those who can pass the exam to enter the teacher training program are believed to already have basic knowledge, especially about the Khmer language, mathematics, and social studies, to understand and teach basic knowledge at the primary school level. This is the reason why the training provides little focus on building their content knowledge about the subjects they will teach at the primary school level.
PST-02	The training focuses more on teaching strategies because we already have basic knowledge from our 12 years of general education that can help us to understand the content in the primary school curriculum and teach basic knowledge and skills at that level.
TT-02	Our pre-service teachers who enter the 12+2 teacher training program already have the basic knowledge to understand and teach basic content at the primary school level. They come here to learn how to teach. That is why the training focuses mainly on equipping them with solid knowledge of teaching methods/strategies.

While a large majority of the participants perceived the little focus of the training program on developing pre-service teachers' content knowledge, a small number of them (e.g., IST-04, IST-09, PST-01, PST-07, and TT-05) opined that some core subjects, such as the Khmer language, mathematics, and science subjects, were given greater attention than the others. As articulated by one in-service teacher:

I studied many subjects at the teacher training center, such as the Khmer language, mathematics, psychology, music, etc. However, the core subjects were the Khmer language and mathematics, which received greater attention than the others. (IST-04)

This similar view was also echoed by another in-service teacher:

Regarding content knowledge development, I learned more in the science subjects. The teacher trainers usually took lessons from the primary school curriculum to conduct experiments for us. (IST-09)

Overall, most participants conveyed a general lack of emphasis on building content knowledge through the 12+2 teacher training program. Attributed to that was the perception that pre-service primary school teachers already possessed basic content knowledge for teaching at the primary school level prior to their enrollment in the training program.

5.1.2 General Pedagogical Knowledge

In terms of general pedagogical knowledge, all 27 participants positively perceived that the 12+2 teacher training program helped pre-service teachers to gain knowledge about general strategies and techniques for teaching at the primary school level. A large majority of them also revealed that the training supported pre-service teachers in grasping the general principles of classroom management, child development, and psychology. The following remarks are demonstrative of these assertions:

As for general teaching methods/strategies and classroom management techniques, we got a lot from the training. That's what we really need to be effective teachers. (IST-05)

I also gained an understanding of child psychology, their mental and physical development, changes in their feelings and attitudes, how children at the primary school level learn, and instructional strategies that are appropriate for children at different primary school levels. (IST-08)

The training helped me understand child psychology, classroom

management, and instructional strategies. (PST-03)

For this knowledge (general pedagogical knowledge), we help pre-service teachers to gain practical knowledge about general teaching strategies and child psychology. (TT-02)

Aside from those mentioned above, more than half of the participants pointed out that the two-year training program supported pre-service teachers in acquiring knowledge about producing teaching aids/materials and lesson planning. The following conversation excerpts from interviews serve to exemplify these contentions:

Conversation excerpts

Researcher: With regard to general pedagogical knowledge, what did they teach you at the teacher training center?

IST-06: During my two years of training at the teacher training center, I learned a lot about ..., lesson planning, and producing teaching materials.

IST-12: The training also equipped me with knowledge and skills in producing teaching materials, writing effective lesson plans, [...].

PST-07: Lesson planning is an essential part of the training, so I learned a lot about it.

Conversation excerpts

Researcher: With regard to general pedagogical knowledge, how does the training program help pre-service primary school teachers gain this knowledge? What does the training program focus on?

TT-04: In addition to teaching strategies, I also teach them how to write inquiry-based learning (IBL) lesson plans and how to produce and use supportive teaching materials.

TT-06: I often lead the pre-service teachers to produce new teaching materials based on specific types of lessons.

In summary, these findings indicated that the development of pre-service teachers' general pedagogical knowledge was viewed in a positive light by almost all of the participants, particularly concerning general principles of teaching strategies, classroom management, and child development and psychology.

5.1.3 Pedagogical Content Knowledge

On the question of pedagogical content knowledge (PCK), most participants were of positive perception that the 12+2 teacher training program helped pre-service teachers to grasp subject-specific teaching strategies, techniques, and steps to teach at the primary school level. The following were commonly shared views among most participants:

There was a methodology part for each core subject in which teaching methods/strategies for each subject and different types of lessons were taught. For example, in the Khmer language, we were trained on how to teach reading, grammar, and vocabulary, among others. After the two-year training, I felt that I gained a lot of knowledge and skills in terms of strategies/methods for teaching different subjects. (IST-03)

The training helped me learn methods for teaching different subjects, such as the Khmer language and mathematics. [...] I learned to teach those subjects with various teaching steps and methods depending on the types of lessons. For example, in the Khmer language, I learned to teach reading, dictation, calligraphy, and writing, among others. (IST-08).

To support his similar claim, a pre-service teacher provided an interesting example of how he would teach a math lesson on multiplying fractions by integers (whole numbers).

I want to give an example of how to teach multiplying fractions by integers (whole numbers). First, the teacher can provide a real-life example/problem of multiplying fractions by integers. For example, Vatey (A Khmer name) lines up 12 pieces of bricks, and each brick is 20 centimeters long. How long are all the bricks lining up together? Next, the teacher can give students some time to read the problem and try to understand it, and then the teacher can provide an explanation of the problem. After that, the teacher can ask the students to work in heterogeneous groups on the problem within a given time allowance and then ask the students many questions surrounding the given problem so that all the students can think and understand the problem better. The teacher can also draw a picture of 12 bricks on the board lining up together or use real-life objects (can be real bricks or something that looks like bricks) and ask the students to work in groups again to solve the problem. While students are working in groups, the teacher should move around to check on their progress and make sure all the students participate. After all the groups solve the problem, the teacher can ask representatives of each group to write down their answers on the board. Finally, the teacher facilitates and concludes the overall answer. After concluding the answer, the teachers can ask the students if there is still anything they are not sure about. The teacher can ask all the students to work individually on a different problem for further practice. The teacher can also ask the students to conclude a general principle of multiplying fractions by integers from their understanding and practice. (PST-05)

Several teacher trainers (e.g., TT-03, TT-04, TT-05, and TT-07) also affirmed that through the 12+2 teacher training program, they supported pre-service teachers in understanding how to teach particular subjects. The following conversation excerpts attest to this claim:

Conversation excerpts

Researcher: Regarding pedagogical content knowledge of specific subjects such as Khmer language and mathematics, how do the teacher trainers help pre-service primary school teachers to gain such knowledge?

TT-04: I teach my pre-service teachers instructional strategies for different types of lessons. For example, in a lesson that requires experimental activities, we need to define what we want the students to know, what steps we need to apply, what materials/equipment we need, and the process we

need to do. I always advise the pre-service teachers that when we teach a lesson, we need to understand the lesson clearly and find key ideas in that lesson. All of our teaching activities/strategies must be directed to help students get those key ideas so that the objectives can be achieved at the end of the lesson. When teaching about food, the key question should not be just about types of food; it should also include the benefits of eating certain types of food for our health. This key question gives directions for the entire lesson.

TT-05: As I mentioned before, for core subjects such as mathematics, Khmer language, and science, the curriculum includes content knowledge of the subjects and teaching methodology for the subjects. For the methodology part, the training focuses on equipping pre-service teachers with the knowledge and skills to teach particular subjects.

In addition to subject-specific teaching strategies, two-thirds of the participants were of the view that the training program facilitated pre-service teachers in comprehending the curriculum materials at the primary school level through teaching demonstrations, classroom observations, and practicums. However, it was also acknowledged that exposure to the primary school curriculum was somewhat limited. Table 5.3 below illustrates this assertion:

Table 5.3

Participants' Views on Opportunities to Understand Subject-Specific Curriculum

Participants	Illustrative Quotes
IST-05	We learned about the primary school curriculum during the practicums through classroom observations and teaching practices with support from homeroom teachers at partner public primary schools. It was very practical.
IST-09	There were some teaching demonstrations of lessons taken from the primary school curriculum, but these activities did not happen much.
IST-12	Our teacher trainers sometimes tasked us with teaching demonstrations of actual lessons from core textbooks in the primary school curriculum. We practiced teaching in front of the class, and

	the teacher trainers gave us constructive feedback to improve our teaching. The teaching demonstrations covered different subjects at different grade levels. That was very helpful.
PST-04	Sometimes the teacher trainers tasked us with conducting teaching demonstrations of our preferred lessons chosen from any core textbooks of the primary school curriculum. They watched our teaching and provided constructive feedback to improve our teaching. The practicum also helped us gain knowledge about the primary school curriculum.

Despite the positive perceptions toward the building of subject-specific teaching strategies and the understanding of curriculum materials, only a few participants (e.g., PST-03 and PST-04) thought the training program helped them understand the primary purpose of teaching specific subjects at the primary school level, which is a fundamental part of PCK. The following statements affirm this assertion:

And for the Khmer language, the purpose is to make sure they (students) can read and write Khmer consonants and vowels, pronounce and spell words, take dictation, and perform calligraphy. (PST-03)

Yes, they (teacher trainers) helped us to understand the purposes of teaching particular subjects and even every lesson they taught us. For example, in mathematics, the primary purpose is to equip students with basic math knowledge and skills such as addition, subtraction, multiplication, and division so that students can use this knowledge and skills in real life and as a foundation for further education. (PST-04)

On the whole, most participants perceived that the 12+2 teacher training program facilitated the development of subject-specific teaching strategies, techniques, and steps and, to some extent, the understanding of subject-specific curriculum materials for teaching at the primary school level. Despite that, the findings revealed that only a few pre-service teachers thought the program supported their clear understanding of the purpose of teaching specific subjects, which is a vital

component of PCK.

5.1.4 Knowledge of Context

With regards to knowledge of context encompassing student diversity, community expectations, traditions and culture, and school and government guidelines and policies, a large number of participants were of the perception that through the 12+2 teacher training program, pre-service teachers' knowledge of context was developed through various subjects and activities. This finding showed that no specific subject or activity was solely aimed at developing this sort of knowledge. Table 5.4 below unfolds some common perceptions shared by most participants:

Table 5.4

Participants' Views on the Building of Knowledge of Context through Different Subjects and Activities

Participants	Illustrative Quotes
IST-02	This kind of knowledge was covered across different subjects, such as the Khmer language, social studies, general knowledge, and human or child rights.
IST-11	The training program is like a package comprising many subjects, so the knowledge of contextual factors, such as our society, traditions, culture, and education-related policies and regulations, is covered in different subjects.
PST-04	Much of this knowledge is covered in different subjects. ... Classroom observations and teaching practicums at partner schools also help us get to know real-world classroom situations and a sample of the student population we will likely experience in the future.
TT-03	Knowledge of these contexts, such as our culture, traditions, morality, gender, and technology, is covered in different subjects. We always try to instill this knowledge in our teaching when we can.
TT-06	My subject covers some contextual knowledge, particularly social laws and issues, religion, and human rights.

Given that technology is a constantly evolving phenomenon that may greatly influence the way in which teaching and learning are carried out, the participants were also inquired as to whether the training program taught pre-service teachers a variety of available technologies/applications that could be used in educational settings. Surprisingly, two-thirds of the participants reported that the training program just taught pre-service teachers rudimentary computer skills and knowledge in order for them to perform the necessary administrative tasks. This point is accentuated by the following quotes:

There was a computer subject that covered basic computer skills such as typing and using some OpenOffice applications for administrative tasks. (IST-02)

There was a computer subject in the training program. I learned basic computer skills such as typing and OpenOffice applications similar to Microsoft Word, Excel, and PowerPoint. (IST-06)

Regarding technology, we learned how to use OpenOffice applications to perform school administrative tasks such as typing documents, preparing score lists, etc. (PST-03)

For IT (information technology), the training focuses on building up basic IT skills of pre-service teachers, such as keyboard typing and using OpenOffice applications (similar to Microsoft Word, Excel, and PowerPoint). (TT-03)

It is also noteworthy to mention that a few participants (e.g., PST-01 and TT-04) asserted that pre-service teachers were, in a general sense, made aware of and encouraged to be adaptive to the teaching contexts where they would be stationed. The subsequent statements reflect their affirmations of this matter:

Regarding this, we were also made aware of any contexts that might influence our teaching. For example, teaching students in rural/remote

areas requires greater flexibility as students in such disadvantaged areas do not usually receive enough guidance/home education from their parents, unlike students in urban areas. So, as teachers, if we teach students in rural/remote areas, we need to be flexible in responding to their needs, as their absorptive ability can be slow. (PST-01)

For other teacher trainers, I don't know, but for me, when I teach, I always encourage my pre-service teachers to be flexible in terms of teaching materials and strategies to be used, depending on the actual circumstances and geographical area of their prospective schools. (TT-04)

Overall, it was perceived by many participants that the knowledge of contextual factors was developed through and embedded in different subjects and activities available in the training program. Concerning the technological aspects, the training program only taught basic computer skills. In addition, a few participants shared that through the training program, pre-service teachers were instilled with a sense of awareness and understanding of the contexts in which they would be teaching.

5.2 Discussion of the Findings

The discussion of the findings in this section adheres to the same sequence as the presentation of the findings in order to maintain coherence and uniformity.

5.2.1 Content Knowledge

Content knowledge has long been advocated as an essential component of effective teaching (Ball et al., 2008; Grossman, 1990; Shulman, 1987; Tatto, 2008). For instance, teachers with good content knowledge are able to make concepts easily understandable for students, better identify and address students'

misconceptions, and establish a conducive environment for students to learn effectively (see, for example, Bold et al., 2017; Chen et al., 2020; Lappan, 1999).

However, the findings presented in section 1.5.1 suggest that the 12+2 teacher training program in Cambodia places little emphasis on developing pre-service teachers' content knowledge. Despite being specified in the curriculum that certain elements of the training program emphasize content knowledge acquisition across different subjects, most participants involved in the study perceived the lack of sufficient focus on content knowledge development. This perceived lack of adequate focus on content knowledge development prevails, even though several key subjects are allocated an equal amount of time for the acquisition of content knowledge and teaching methodology. For example, for the two core subjects, Khmer language and mathematics, each receives an equal allocation of 90 hours over the two-year duration for content knowledge and teaching methodology, including theory and practice (MoEYS, 2017). Except for subjects like history, geography, and morality-civics, other important subjects, such as science and the English language, are also allocated an equal number of hours for both content knowledge and teaching methodology (MoEYS, 2017).

The lack of emphasis on content knowledge development seems consistent with many studies on pre-service teacher education in different contexts, including developed and developing countries. For example, in the United States, a review of teacher preparation programs by the National Council on Teacher Quality (NCTQ) revealed alarming results. It was found that fewer than one in nine primary school teacher preparation programs was preparing pre-service teachers to teach

content expected in the state standards (Greenberg, McKee, & Walsh, 2013). In Canada, Kosnik and Beck's (2009) study emphasized the relative neglect of content knowledge in teacher education and called for a return to prioritizing content knowledge development because teachers spend most of their school days teaching specific subjects. Studies in developing countries like Ghana and El Salvador also showed that content knowledge development was not adequately emphasized, resulting in inadequate content knowledge of teachers (see Brunetti et al., 2020; Buabeng, Ntow, & Otami, 2020). In Cambodia, many years ago, a study conducted by the World Bank revealed that pre-service teacher education failed to equip graduates with adequate content mastery (Tandon & Fukao, 2015). Nevertheless, as Tatto (2008) posited, good teacher education programs continue to prioritize the importance of content knowledge learning as its role in effective teaching and interplay with other knowledge domains remain critically significant.

Attributed to the little focus on content knowledge development, as this study showed, was the perception that prior to attending the training program, pre-service teachers already possessed basic content knowledge to understand and teach at the primary school level, given that they had completed 12 years of general education. Even though it may be the case for some pre-service teachers who enter the teacher training program with some basic knowledge of the core subjects such as Khmer language and mathematics, it does not necessarily hold true for all pre-service teachers. It does not also necessarily suggest that they can teach content at the primary school level effectively, as it is not the same as how they previously learned and were taught in classes (Ball et al., 2008). Such a perception that merely having basic content knowledge acquired through 12 years

of general education is sufficient for primary school teaching implies a clear misconception that possessing strong content knowledge is not viewed as necessary for teaching basic knowledge and skills at the primary school level. Thus, pre-service teachers' content knowledge is mainly dependent on their own existing knowledge from their 12 years of general education. This perception is in contrast to the findings of a 2020 NCTQ survey, which indicated the views of leaders of teacher preparation programs and state education agencies on the content knowledge of primary school teachers. They overwhelmingly agreed that primary school teachers need to have more advanced knowledge of the content than what they teach their students (Putman, 2021). Moreover, Poulson (2001) drew attention to a study involving a survey of teachers from 400 primary schools in Great Britain, showing that even at the primary level, teachers with insufficient content knowledge, particularly science and mathematics, did not feel confident in teaching. As opposed to the belief that teaching foundational skills and knowledge at the primary school level, such as literacy and mathematics, may not require strong content knowledge, research has established that teachers with a broad base of content knowledge are better equipped to facilitate students' reading comprehension and make mathematical concepts meaningful beyond the classroom (Mills, 2015; Putman, 2021; Tatto, 2008). It is worth noting that it is primary school education that lays the foundation for students to succeed in their subsequent educational endeavors (UNICEF, 2023).

The lack of focus on content knowledge development of the 12+2 teacher training program in Cambodia may have implications for the quality of primary school teachers it produces and the subsequent quality of education students receive.

The issue may become further entrenched and normalized within the program if not adequately addressed, resulting in a cycle of ill-equipped teachers and diminished educational outcomes. As a matter of fact, teacher quality in Cambodia remains a critical concern (No & Sok, 2022; Sot et al., 2022). Research has also shown a prevalent issue in low- and middle-income countries, where many teachers often lack the minimum content knowledge to teach (Popova et al., 2019; Taylor & Robinson, 2019; UNESCO, 2023b). Therefore, it is crucial to counter the misconception to promote an accurate understanding of the vital role that deep subject matter expertise plays in primary school education.

5.2.2 General Pedagogical Knowledge

General pedagogical knowledge refers to a broad understanding of the principles, strategies, and practices that are essential for effective teaching and learning (Shulman, 1987; Ulferts, 2021). Guerriero (2013) regards this knowledge as “the specialised knowledge of teachers for creating effective teaching and learning environments for all students” (p. 2). According to Grossman (1990), general pedagogical knowledge may include knowledge about instructional strategies, learners and learning, and classroom management, among others.

The findings of this study suggest that the 12+2 teacher training program in Cambodia positively influenced pre-service teachers' acquisition of general pedagogical knowledge in several key areas. In particular, all 27 participants interviewed for this study perceived that the training program supported pre-service teachers in gaining knowledge about general strategies and techniques for teaching at the primary school level. Most of them also indicated that the training

program supported pre-service teachers in grasping the general principles of classroom management, child development, and psychology. These findings reflect the structure of the 12+2 teacher training curriculum, which allocates a minimum of 50% of its total hours to teaching methodology for each principal subject, including Khmer language, mathematics, science, English language, history, geography, and morality-civics (MoEYS, 2017). The curriculum also includes a comprehensive subject on psychopedagogy, designed to equip pre-service teachers with a good understanding of fundamental principles of child psychology and their physical, social, and emotional development at different stages (MoEYS, 2017). This knowledge is critical in shaping educational strategies and approaches that are responsive to the holistic needs of students.

In the broader context, the findings are also in line with previous research, which has found that pre-service teacher education programs often incorporate the development of pedagogical knowledge as a core part of training. For example, it was found that general pedagogical knowledge, such as instructional strategies and classroom management, is a core component of most pre-service teacher education curricula (Lewin, 2004; Wilson, Floden, & Ferrini-Mundy, 2001). An understanding of student learning, development, motivation, and individual differences has also been a key part of teacher preparation (Woolfolk Hoy, 2000).

Moreover, it was noted that the teacher training program supported pre-service teachers in acquiring knowledge about producing teaching aids/materials and lesson planning, which are essential components of effective teaching (see Farrow, 2003; Sahin-Taskin, 2017; Savage, 2014). Studies in various contexts

have also indicated that pre-service teacher education programs often emphasize the development of practical skills such as lesson planning and the production of teaching aids/materials (see Causton-Theoharis, Theoharis, & Trezek, 2008; Damnet, 2021; Panasuk & Sullivan, 1998; Pang, 2016).

The positive perception toward the development of general pedagogical knowledge, such as teaching strategies, classroom management, child development and psychology, lesson planning, and production of teaching aids/materials, may be understood by two underlying factors. The first factor is that the 12+2 program in Cambodia, due to its short length, is often regarded as a teacher training program. The term 'training' rather than 'education' in the Cambodian context underscores the need to equip pre-service teachers with the foundational yet necessary pedagogical knowledge and skills such as those mentioned above. The second factor lies in the perception that upon enrolling in the teacher training program, pre-service teachers already possess the basic knowledge to understand and teach content at the primary school level (see the discussion in section 5.2.1). This perception appears to shift more attention from developing content knowledge to developing pedagogical knowledge and skills for pre-service teachers.

5.2.3 Pedagogical Content Knowledge

Pedagogical content knowledge (PCK) is built on the foundation of strong content knowledge and pedagogical knowledge. It is considered a special form of professional understanding of teachers (Shulman, 1987). According to Grossman's (1990) model of teacher knowledge, PCK, which comprises broad

areas such as subject-specific instructional strategies, subject-specific curricula, knowledge of students' understanding as well as purposes of teaching a specific subject, has a reciprocal relationship with all other knowledge domains, meaning that a lack of one knowledge domain can affect the PCK ability of teachers.

The findings unveiled in section 5.1.3 indicate that most participants, including in-service teachers, pre-service teachers, and teacher trainers, positively perceived the 12+2 teacher training program in terms of developing subject-specific instructional strategies and understanding subject-specific curriculum materials. They reported that the training program covered various teaching strategies, techniques, and steps to teach each core subject, such as Khmer language and mathematics. For example, pre-service teachers learned different methods for teaching various aspects of the Khmer language, such as reading, grammar, and vocabulary. They also mentioned that, despite being limited, the training program facilitated pre-service teachers' comprehension of the primary school curriculum materials through classroom observations, teaching demonstrations, and practicums. These findings reflect the training curriculum well, which incorporates a methodology part for each principal subject, such as Khmer language, mathematics, and science, as well as classroom exposures and practices (MoEYS, 2017). All of these contribute to the development of pre-service teachers' CPK. An, Kulm, and Wu (2004) see PCK as the knowledge of effective teaching in which understanding the curriculum is essential. Furthermore, exposure to authentic classroom experiences through observations and teaching practices provides pre-service teachers with opportunities to learn specific strategies from experienced teachers, apply their subject matter knowledge and instructional

strategies to real-world classroom situations, and reflect on their teaching practices with experienced teachers (Berry, Depaepe, & Van Driel, 2016; Ekiz-Kiran, Boz, & Oztay, 2021). A study investigating the development of pre-service primary school mathematic teachers' PCK through a school practicum course indicated that observations in real-world classroom settings and opportunities to discuss their observations with experienced mentors significantly improved their PCK (Akkoç & Yeşildere, 2010).

Based on the findings presented in section 5.1.3, only a few participants (e.g., PST-03 and PST-04) felt that the teacher training program helped pre-service teachers understand the purposes of teaching specific subjects at the primary school level. This suggests that the teacher training program might not effectively or adequately communicate the purposes of teaching specific subjects at the primary school level to pre-service teachers. This is concerning because clearly understanding the goals and objectives of teaching particular subjects is crucial for effective teaching (Shulman, 1986; 1987). Teachers who demonstrate this understanding can help their students see the relevance of what they are learning, design appropriate instructional strategies, and align them with educational goals or standards. As Grossman (1990) established, a key aspect of PCK is teachers' clear understanding of the purposes of teaching specific subjects. Overall, teachers with strong PCK can better convey subject matter content to students in understandable and engaging ways by breaking down complex concepts into smaller, manageable parts and using real-world examples and applications to make the content relevant to students (Park & Oliver, 2008; Read & Kaiser, 2020).

While an overwhelming number of the participants appear to view the development of PCK through the 12+2 teacher training program in a positive light in terms of acquiring subject-specific instructional strategies and understanding primary school curriculum materials, the little emphasis on content knowledge development (as discussed in section 5.2.1) may affect the depth of PCK development. As the literature establishes, PCK is the intersection between content knowledge and pedagogical knowledge, so a dearth of either domain of knowledge can hinder or undermine PCK competence. For instance, teachers with inadequate content knowledge may encounter difficulty identifying misconceptions or common difficulties that students may face when learning specific content, thereby struggling to present it in ways that are easily accessible to students. Moreover, the limited exposure to authentic classroom experiences and insufficient or ineffective communication regarding the purposes of teaching particular subjects may also have implications for PCK development among pre-service teachers.

5.2.4 Knowledge of Context

Knowledge of context encompassing student diversity, community expectations, culture, and relevant policies has a vital interplay with other knowledge domains in creating effective teaching and learning (Grossman, 1990). This knowledge can support teachers in tailoring their instruction to meet the diversity of students and align with relevant policies or educational goals (Feldman & Herman, 2015; Mavuru & Ramnarain, 2018).

The findings outlined in section 5.1.4 indicate that pre-service teachers' knowledge

of context, including student characteristics, community expectations, traditions and culture, and school and government guidelines and policies, was cultivated through various subjects/activities offered in the 12+2 teacher training program. This is somewhat unsurprising because acquiring such broad and complex knowledge requires multiple approaches to accumulating knowledge from varied sources over time (Knowles et al., 1999). However, it is not clear whether the development of contextual knowledge for pre-service teachers through a range of subjects/activities is a structured part of the training program because the curriculum appears to fail to mention it. Furthermore, developing such knowledge is not among the seven key components of the training program.

Moreover, in a state of ongoing technological advancement that can influence the teaching and learning process, knowledge of available technological tools and their possible applications in classroom settings may also be considered a form of contextual knowledge under the broader social, cultural, and institutional contexts in which technology will be utilized (Mishra, 2019). Relative to this, the study found that, through the training program, pre-service teachers were only equipped with rudimentary computer skills and knowledge to perform administrative duties. Even though such knowledge and skills can provide pre-service teachers with versatile and powerful ways to create, organize, analyze, and present information, they are more of what Starkey (2020) referred to as generic digital competencies, given that they are not specific to teaching. This direction seems to diverge from the growing attention of teacher preparation programs to arm pre-service teachers with the knowledge and skills to integrate technology effectively into classroom instruction (Brupbacher & Wilson, 2009; Mishra, 2019; Niess, 2017;

Nuangchalem, 2020; Thomas et al., 2013). For example, the Technological Pedagogical Content Knowledge (TPACK) model, which was first introduced by Mishra and Koehler (2006), has increasingly been used in both pre-service teacher education and teacher professional development. However, insufficient ICT facilities and resources combined with the limited ICT knowledge of teacher trainers/educators may have constrained the integration and development of sophisticated digital teaching competencies for pre-service teachers in Cambodia (Sot et al., 2022; Tandon & Fukao, 2015), as well as in other contexts (Goktas et al., 2009; Martinovic & Zhang, 2012; van Aswegen et al., 2022).

Apart from that, a few participants (e.g., PST-01 and TT-04) noted that pre-service teachers were made aware of and encouraged to exhibit adaptability to varying educational settings. For example, teaching in remote/rural areas may require greater instructional flexibility in responding to the diverse needs of students. This finding is consistent with the literature, underscoring the significance of teacher preparation programs to promote teachers' capacities to adapt to diverse learners in varied teaching contexts (Darling-Hammond, 2017).

Summary

This chapter has presented and discussed key findings related to the first research question, which focuses on the perceptions of in-service teachers, pre-service teachers, and teacher trainers regarding the development of the knowledge base of pre-service primary school teachers in Cambodia through the 12+2 teacher training program. The chapter has revealed the little emphasis of the program on developing the content knowledge of pre-service primary school teachers due to

the perception that prior to attending the training program, pre-service teachers already possessed basic content knowledge to understand and teach at the primary school level. The chapter has argued that this perception is a misconception, implying that possessing strong content knowledge is not viewed as necessary for primary school teaching. Apart from that, the chapter has shown that the development of general pedagogical knowledge through the program was positively perceived in several key areas, such as general teaching strategies and techniques, classroom management, child development and psychology, production of teaching aids/materials, and lesson planning. The development of PCK was also perceived in a positive light in terms of subject-specific teaching strategies and understanding of primary school curriculum materials. However, with little emphasis on content knowledge development and insufficient exposure to authentic classroom experiences, the depth of PCK development through the program is questioned. Lastly, the chapter has indicated that the pre-service teachers' knowledge of context was cultivated through different subjects and activities included in the program. However, it is not clear whether the development of such knowledge is an intentional or structured part of the training program. Moreover, while this study considered the knowledge of available technological tools and their possible applications in classroom settings as a form of contextual knowledge, it was perceived that the program only armed pre-service teachers with generic digital skills needed to perform basic administrative tasks.

CHAPTER 6: Effective CPD from In-Service Primary School Teachers' Perspectives

This chapter presents and discusses key findings related to the second research question: “What are Cambodian primary school teachers’ perspectives on effective continuous professional development, considering their professional context of constrained resources and support?” Following the same structure as the preceding chapter, this chapter first presents key findings that emerged from the analysis of interview data. It is then followed by a separate discussion section, maintaining the same order as the findings. Finally, the chapter concludes with a summary.

6.1 Effective CPD from In-Service Primary School Teachers' Perspectives

The analysis of interview responses from 12 in-service primary school teachers brought about a variety of perspectives on effective CPD, which are interrelated and can be themed up, as shown in Table 6.1. The three main themes and their sub-themes, which address the second research question of the study, are presented in the order shown in Table 6.1.

Table 6.1*In-Service Primary School Teachers' Perspectives on Effective CPD*

Main Themes	Sub-themes	Number of Participants Contributed	Number of Mentions
Approaches to CPD	Collective and collaborative CPD	12	23
	Enabling conditions for learning	10	22
	Sustained and coherent CPD	10	16
	School-based CPD	9	17
Relevance to Teachers	Content focus	12	17
	Meeting teachers' classroom needs	10	15
Assessment and Support	Well-defined evaluation and follow-up system	8	13
	Benefit linkages	8	9
	Support from the school and MoEYS	7	14

6.1.1 Approaches to CPD

Four sub-themes fall under this first main theme, including (1) collective and collaborative CPD, (2) enabling conditions for learning, (3) sustained and coherent CPD, and (4) school-based CPD. Findings related to each of these sub-themes are individually presented below.

Collective and collaborative CPD

As shown in Table 6.1, all 12 in-service teachers involved in the study were of the same view that effective CPD should be done in a collective and collaborative manner. They emphasized that groups of teachers from the same grade level within their schools should work collectively in various forms of collaboration, for

example, peer observation, teaching demonstration, sharing of best practices, group meetings/discussion, and mentoring, among others. The following statements illustrate the common perspectives shared by them:

I think the teaching demonstration among teachers from the same grade level is good [...], as learning appears to be more relevant and practical. (IST-06)

I think if teachers in the same school start to share good practices and work together at the school level, the outcome will be significant. [...] Mentoring is also a practical approach for CPD. (IST-09)

I think classroom observation is an effective form of CPD. When we observe a good teacher's teaching performance, we can learn from his/her teaching strategies and classroom management. That is practical learning if we do it regularly. (IST-12)

With a collective view toward CPD, some other in-service teachers (e.g., IST-03, IST-04, and IST-09) further suggested that teachers from the same grade level should combine efforts to plan lessons, produce teaching materials, exchange best teaching practices, and find solutions for their classroom predicaments. As one in-service teacher articulated:

Teachers who teach at the same grade level show a better understanding of each other. Therefore, they should work together to plan lessons, produce teaching materials, exchange feedback from classroom practices, solve classroom problems, and share best practices. (IST-04)

To sum up, all in-service teachers believed that any collective and collaborative forms of CPD would yield good outcomes, as learning would be more relevant and practical.

Enabling conditions for learning

For a more conventional form of CPD, such as a workshop, seminar, or training course, most in-service teachers suggested that certain conditions be ensured to allow good learning to take place. According to them, those enabling conditions comprised the quality of trainers/presenters, appropriate time and location for learning activities, and expert support. Of all the conditions mentioned, the quality of the trainer/presenter was most frequently mentioned. For most in-service teachers, trainers/presenters should have specialized knowledge about areas of their training; up-to-date knowledge about educational practices, ICT, and English proficiency for research; substantial teaching and research experience at the primary school level; and high instructional ability. Table 6.2 below highlights their shared views on this matter:

Table 6.2

In-Service Teachers' Views on the Quality Teacher Trainers/Presenters Should Have

Participants	Illustrative Quotes
IST-02	For a sort of workshop or training course, teacher trainers or presenters should be specialized and knowledgeable in the areas of their training and have substantial teaching experience at the primary school level.
IST-03	Teacher trainers or presenters should be specialized and knowledgeable in their training areas, plus high instructional capacity. They should have substantial teaching experience at the primary school level.
IST-05	Teacher trainers or presenters should be well-versed in teaching and learning in terms of knowledge and skills and have many years (at least five years) of teaching experience at the primary school level. They need to have a good classroom experience, not just pass on theories they learned to other teachers without having used them in actual classrooms themselves. They also need to be

	up-to-date and knowledgeable about new educational trends, including ICT, teaching theories, and strategies, especially for primary school education. Additionally, they should have a high level of English language ability for research purposes.
IST-07	Trainers or presenters must have substantial classroom experience, particularly those who have been successful in teaching at the primary school level and have extensively researched primary school education.

Moreover, the time and location for CPD activities were also considered conducive to good professional learning. Many in-service teachers proposed that the time for CPD activities, if a conventional approach is taken, should not impinge on their regular teaching hours and that CPD activities should be held at the school where they taught. For these reasons, they suggested that the monthly TTM and some other Thursdays, when classroom contact with students is not required, are the best avenues for CPD activities. These common suggestions are illustrated in the following statements:

Regarding time for CPD activities, the Thursday Technical Meeting is most appropriate as it takes place during teachers' working hours but does not affect their regular teaching hours. Students also do not have classes on some other Thursdays as they just come to school in the morning/afternoon for school environment cleaning. CPD activities can also take place on those Thursdays. (IST-04)

CPD activities, such as workshops or training, should not interfere with our regular teaching hours and should take place in the school where classroom issues exist. (IST-10)

The time for CPD activities should not interfere with the teaching hours. The Thursday Technical Meeting is a good model. (IST-12)

The provision of expert assistance was also considered an enabling condition that allows teachers to have access to personalized support through professional

dialogues/discussions with experts geared towards resolving specific classroom issues. As articulated by one in-service teacher:

[Discussion sessions with experts] ... Teachers raise issues in their classes, and the experts provide tips or strategies to tackle them. This way will directly help teachers as it responds concretely to their classroom issues. (IST-09)

Overall, these findings showed that certain conditions, such as trainer/presenter quality, time and location for CPD activities, and support from experts, were believed by many in-service teachers to be enabling conditions that allow good professional learning to take place if a more traditional approach, such as a workshop or training course, is of preference.

Sustained and coherent CPD

Most in-service teachers interviewed for this study viewed CPD as a sustained and coherent professional learning activity. They thus advocated that for CPD to positively influence classroom practices, it should be sustained over time and support teachers in acquiring coherent knowledge and skills from time to time. They emphasized the need to develop teachers' knowledge and skills on a regular basis while also endeavoring to accommodate their classroom needs. As one of them elucidated:

If CPD is conducted regularly to improve teachers' knowledge and skills based on teachers' actual classroom needs, I think it will be effective as it can be linked to classroom practices over time. (IST-01)

Other in-service teachers further explained that sustained and coherent CPD

would augment the regular learning gains of teachers, encourage them to apply new knowledge and skills in their classrooms, and allow teachers to introspect and provide feedback on their classroom practices. Additionally, they opined that given that classroom issues are incessant, teachers could avail themselves of the available CPD opportunities to seek solutions or advice to tackle their classroom issues. Some of these common views are presented in Table 6.3 below:

Table 6.3

In-Service Teachers' Views on Sustained and Coherent CPD

Participants	Illustrative Quotes
IST-04	If CPD activities can be done consistently and coherently, teachers will be able to keep learning and apply new knowledge and skills in their classrooms.
IST-09	If CPD activities take place on a regular basis with contents building upon one another, the activities are most likely to yield good results in improving teachers' knowledge and skills. Teachers at the primary school level face a variety of issues from time to time. With that being said, regular CPD will become an opportunity for teachers to seek solutions or advice to tackle their classroom issues.
IST-12	If CPD is done regularly and coherently, it will also contribute to the regular learning gain of teachers, which they can try out in their classrooms, reflect, and provide feedback on their practice.

To encapsulate, the majority of in-service teachers maintained that effective CPD should be dispensed regularly and coherently, supporting teachers in making positive classroom impacts through their heightened knowledge and skills.

School-based CPD

Emphasizing the importance of setting for professional learning activities, three-

fourths of the in-service teachers involved in the study contended that CPD should be conducted within the school premises to facilitate learning in a milieu where teaching and learning occur. They posited that school-based CPD would provide teachers with certain conditions to encourage inclusive, collective, and collaborative learning. These encompass convenience in attendance, wider access to teachers, access to appropriate school resources and infrastructure for professional learning activities, and suitability for reform types of CPD such as teaching demonstrations, classroom observations, mentoring, or group meetings. Table 6.4 below highlights common views shared by most in-service teachers:

Table 6.4

In-Service Teachers' Views on Why They Think CPD Should Be School-Based

Participants	Illustrative Quotes
IST-04	CPD activities should be conducted within the school setting where teaching and learning problems occur. This is likely to encourage meaningful participation from the teachers. The school also has learning resources and infrastructure appropriate for professional learning activities.
IST-06	Any CPD activities should take place within the school setting. For example, the teaching demonstration among teachers from the same grade level during the Thursday Technical Meeting is a good example, as learning appears to be more relevant and practical, reflecting what is happening in our schools and classrooms.
IST-09	For example, in group meetings, teachers support each other at the school level by exchanging ideas, best practices, and solutions to classroom issues. This approach is timely and likely effective as it takes place at the school level where problems exist.

Overall, many in-service teachers held that CPD should be school-based on account of their belief that this approach is more likely to foster the active involvement of teachers, enable them to take advantage of the existing resources

and infrastructure within the school setting, and facilitate collective and collaborative forms of CPD.

6.1.2 Relevance to Teachers

This second main theme comprises two sub-themes, specifically (1) content focus and (2) meeting teachers' classroom needs. The individual presentation of findings of each of these sub-themes is provided below.

Content focus

From the standpoint of cultivating practical knowledge and skills relevant to their classroom contexts, all in-service teachers contended that effective CPD should be content-focused, providing the necessary knowledge and skills that help teachers make positive changes at the classroom level. Common content areas on which they wanted CPD activities to focus included primary-level teaching strategies/methods, classroom management, and selection and production of teaching materials. They consistently shared similar comments as follows:

Any CPD activity should focus on developing teachers' knowledge and skills in instructional strategies for primary school students, choosing and producing effective teaching materials, and managing the classroom. (IST-02)

I think the training should focus mainly on teaching strategies/techniques suitable for the primary school level linked to actual practices. At the primary school level, students are somewhat tricky to handle, so the training should also focus on new strategies or techniques for effective classroom management. (IST-05)

CPD activities should focus on classroom management and teaching strategies for large class sizes. Teaching young children at the primary school level is already demanding; it is more challenging with too many students in a class (50-70). So, classroom management is a critical issue for me, lowering the effectiveness of my teaching. (IST-10)

Whilst reiterating the imperative to concentrate on new teaching approaches or strategies and the production of new teaching materials, some other in-service teachers (e.g., IST-08, IST-09, and IST-12) emphasized the significance of cultivating teachers' digital literacy and pedagogy, given the increasingly influential role of technology in the teaching and learning process. To illustrate, one of them proposed:

I think CPD activities should focus more on digital literacy and pedagogy, new teaching approaches, and the production of new teaching materials. ... As you can see, the role of technology in education is increasingly widespread. (IST-08)

Moreover, among the 12 in-service teachers interviewed, two of them stressed the significant role of educational games in primary school teaching. Thus, they suggested that educational games should be a CPD focus for primary school teachers. In their words, they put this notion as follows:

One more important thing is the educational game. Primary school students like learning through playing. If teachers are able to integrate different educational games into their class activities, students are more likely to engage in the teaching and learning process. (IST-04)

Equally important, CPD activities should focus on educational games for each subject. Educational games are beneficial for primary school students. In many cases, less active students are stimulated by educational games and learn better through games. (IST-07)

Overall, the consensus among all in-service teachers was that effective CPD activities should attend to specific knowledge and skills (content focus) pertaining to their classroom contexts and engender positive changes in their classroom practices.

Meeting teachers' classroom needs

The necessity for CPD activities to respond to teachers' classroom needs received overwhelming mentions from most of the in-service teachers interviewed for the study. They argued that effective CPD should be tailored to meet their classroom needs or circumstances, supporting them in tackling their classroom issues and improving their teaching practices. For this to happen, they suggested that teachers' classroom needs be diligently assessed and identified before any CPD activity takes place. They commonly shared the following comments:

To be effective, I think CPD activities should address teachers' classroom needs and challenges. (IST-03)

So, I need practical approaches that can immediately help me deal with my students. I think the training content should be made in consultation with the teachers and in response to their classroom needs. (IST-05)

Teachers' needs should be identified before any CPD activities take place. (IST-08)

A regular assessment of teachers' needs should be done in order to respond appropriately to their needs. (IST-11)

Furthermore, acknowledging that most CPD opportunities in Cambodia were made possible by donors' financial and technical assistance, an in-service teacher made a noteworthy remark:

CPD activities should meet teachers' classroom needs, not just donors' needs. (IST-01)

To conclude, a large majority of in-service teachers involved in the study suggested that any CPD endeavors should be directed toward meeting their classroom needs in order to help them make a positive impact in the classroom.

6.1.3 Assessment and Support

This last main theme has three sub-themes, including (1) a well-defined evaluation and follow-up system, (2) benefit linkages, and (3) support from the school and MoEYS. Below are the findings related to each of these sub-themes.

Well-defined evaluation and follow-up system

Eight of the 12 in-service teachers interviewed for this study were unanimous in their view that successful CPD should incorporate a well-defined evaluation and follow-up system. The well-defined system they referred to involves (1) conducting a regular needs assessment prior to the occurrence of any CPD activities, (2) evaluating the effectiveness of the CPD activities provided, (3) monitoring or following up on classroom implementation, (4) collecting feedback on their classroom practices, and (5) further supporting their CPD endeavors. The following quotes in Table 6.5 affirm these suggestions:

Table 6.5*In-Service Teachers' Views on Having a Well-Defined Evaluation and Follow-Up System*

Participants	Illustrative Quotes
IST-01	So, the situation of the school or teachers must be studied in advance so that appropriate CPD activities can be provided depending on the actual needs or circumstances. Also, any CPD program should have a systematic process to evaluate the CPD activities, follow up on whether or not teachers implement what they have learned in their classrooms, and collect feedback to improve future CPD activities.
IST-03	I think it can be effective if there is a well-defined evaluation and follow-up system, making sure teachers implement the new skills or knowledge they gain from their CPD activities in their classrooms, allowing them to provide feedback on their classroom practices, and further supporting them with more CPD activities.
IST-08	There should also be a systematic evaluation and follow-up process to ensure teachers apply what they have learned in their classrooms and provide feedback on their practices.
IST-11	If CPD can be done systematically with clear planning in terms of what primary school teachers should learn and the evaluation process, I think CPD will be effective.

To summarize, the majority of in-service teachers (almost three-quarters) believed that a systematic approach is crucial for the success of CPD. This includes conducting a needs assessment, evaluating the effectiveness of CPD provision, monitoring the classroom implementation, and gathering feedback on classroom practices to better support teachers with future CPD activities.

Benefit linkages

Almost three-fourths of in-service teachers interviewed for the study appeared to underscore the significance of benefits associated with CPD engagement. Therefore, they proposed that involvement in CPD activities should be linked to

financial and non-financial benefits. This proposal was to encourage their engagement with CPD activities as well as to recognize their CPD commitment.

The following statements attest to this suggestion:

Financial and non-financial benefits should be provided to teachers who engage in CPD activities in order to motivate them and encourage their meaningful participation. (IST-03)

I think more budget from MoEYS is necessary to implement CPD activities for teachers as well as to provide certain benefits to teachers to recognize their engagement in CPD activities. (IST-11)

Pertaining to this suggestion, one of them made a compelling comment. He explained that:

..., and financial support also needs to be considered. Salaries for teachers are low. While understanding the benefits of CPD, dedicating our time to CPD activities is a tradeoff between earning more money to support our families and gaining more knowledge and skills. (IST-05)

Overall, a significant number of in-service teachers believed that the linkages between CPD engagement and benefits could be critical in promoting active and meaningful participation in CPD activities and dedication among teachers. This could ultimately enhance the success of CPD programs.

Support from the school and MoEYS

More than half of the in-service teachers interviewed for this study expressed their view that both the school and MoEYS have a shared responsibility to offer the necessary support and create favorable conditions to institutionalize CPD and

ensure that teachers maintain their professional growth. The statements below illustrate this suggestion:

Schools should also ensure that a professional learning community occurs within the school. (IST-08)

MoEYS should work closely with school directors to instill a lifelong learning mindset within the school. (IST-09)

MoEYS should provide more CPD activities and work with schools to institutionalize CPD within the school by establishing conducive conditions for teachers' professional learning. (IST-12)

Furthermore, some of them suggested that the school and MoEYS should offer more support, such as school supplies, resources, and technology assistance, to teachers so that they could apply their CPD learning and continue their professional growth, particularly through the use of digital devices and the internet.

As they put it:

MoEYS should provide more support in terms of school supplies and resources so that teachers can implement what they have learned from their CPD activities. ... In each school, there should be an IT person who can support teachers in terms of technical issues and train teachers to use digital devices for teaching and learning. (IST-05)

They [school & MoEYS] should also provide necessary conditions for teachers to develop themselves professionally and implement what they have learned, such as access to adequate resources, digital tools, and the internet. (IST-07)

Overall, some in-service teachers believed that support from both the school and MoEYS in terms of institutionalizing CPD, providing logistical support for classroom implementation, and giving teachers technical support to continue their

professional learning would contribute to the effectiveness of CPD.

6.2 Discussion of the Findings

The discussion of the findings in this section follows the same sequence as the presentation of the findings in order to maintain clarity and consistency.

6.2.1 Approaches to CPD

Collective and collaborative CPD

The findings of this study suggest that in-service teachers consider that collective and collaborative forms of CPD, such as peer observation, sharing of best practices, group meetings/discussions, and collaborative lesson planning, among others, are practical approaches to enhancing their teaching practices. This substantiates previous research that highlights the significance of collaborative and collective learning in teacher professional development (Cordingley et al., 2003; Darling-Hammond et al., 2017; Garet et al., 2001; Guskey, 2003a; Hargreaves & Fullan, 2012; Hunzicker, 2011; Whitehouse, 2011). For example, Darling-Hammond et al. (2017) found that effective teacher professional development provides teachers with opportunities to work with their colleagues and enables a learning community within their professional contexts. The Japanese lesson study is a good example (Murata, 2011; Seleznyov, 2018). In the same vein, Hunzicker's (2011) review suggests that CPD becomes effective when teachers share best practices, exchange viewpoints, discuss classroom issues, and work together to address them. In addition, some in-service teachers in this

study explicitly stressed the importance of collaborating with colleagues from the same grade level within their schools. This notion stems from the view that teachers from the same grade level share a better understanding of each other, for example, in terms of teaching practices, curriculum materials and resources, and classroom challenges. The view of teachers from the same grade level working together within the school corroborates the study of Garet et al. (2001). The study undertaken by Garet et al. (2001) suggested that CPD that is designed for groups of teachers from the same school, department, or grade level presents a variety of potential benefits. These benefits consist of the opportunity to discuss concepts, skills, problems, and students' needs across classes and the potential to sustain changes in classroom practices over time (Garet et al., 2001). From the theoretical point of view, collective and collaborative CPD aligns well with the assumptions or principles of both adult learning theory and situated learning theory. In particular, adult learners have prior experience and are interested in dealing with real-life problems rather than abstract knowledge (Knowles, 1984a). Opportunities such as sharing best practices, discussing classroom issues, and planning lessons with colleagues conform well with the learning traits of adults. Moreover, according to situated learning theory, learning is a social process, and learners benefit from interacting with others through, for example, collaboration and group work (Lave & Wenger, 1991).

The view of in-service teachers toward collective and collaborative approaches to CPD points to the significant role of collegial support and interaction in professional development, which can be more accessible, while the support for the conventional forms of CPD, such as workshops or training, remains highly narrow

in Cambodia (Kheang et al., 2018; King, 2022; No & Sok, 2022; Phin, 2014; Pich, 2017).

Enabling conditions for learning

The findings presented in section 6.1.1 above shed light on the conditions that Cambodian in-service teachers believe enable good professional learning if a sort of conventional form, for instance, a workshop, seminar, or training course, is to be taken. It is suggested that the quality of trainers/presenters is the most crucial condition, followed by appropriate time and location and expert support. These conditions are essential to foster an environment where teachers can be self-directed in their professional learning, utilize their prior experiences, and engage in real-world problem-solving within their professional contexts. These are in line with the principles of both adult learning theory and situated learning theory (see Knowles, 1984a; Lave & Wenger, 1991).

The craving for qualified trainers/presenters is a predictable phenomenon, given their fundamental role in the learning process. In a workshop/training-styled CPD, the quality of trainers/presenters is usually of great concern (Ayvaz-Tuncel & Çobanoğlu, 2018; Brown et al., 2001; Bubb & Earley, 2007; Sol, 2020). It is argued that trainers/presenters should possess specialist knowledge and skills, be capable of delivering high-quality lectures, and be skilled in engaging and motivating participants (see Ayvaz-Tuncel & Çobanoğlu, 2018; Guskey, 2003b). Studies by Brown et al. (2001) and Sol (2020) found that teachers valued trainers/presenters with in-depth knowledge of their fields and substantial classroom experience. The emphasis of Cambodian in-service teachers on

trainer/presenter quality reflects their desire for high-quality CPD that can benefit their professional growth and ultimately enhance their classroom practice.

Many in-service teachers who participated in this study also considered the time and location for CPD activities an enabling condition for their professional learning. They generally suggested that conventional CPD approaches, such as workshops or training, should not interfere with their regular teaching hours and should take place in their schools. While adhering to this suggestion, they made it clear that despite being part of the school day, there are occasions (i.e., some Thursdays) during which contact hours with students are not required. These are the times they consider most suitable for engaging in CPD activities. Evidently, time is a great cause of concern with respect to CPD activities for teachers and, therefore, must be judiciously determined (Cordingley, 2008; Geldenhuys & Oosthuizen, 2015; Sol, 2020). However, some collective and collaborative forms of CPD, for example, mentoring and coaching, can also be integrated into teachers' instructional time (Garet et al., 2001). Apart from that, the preference for CPD activities to take place in their schools may be associated with its convenience of access. It is also suggested that the school setting is the most conducive avenue for CPD delivery. As King (2022) argued, "keeping teachers in their working environment is key in enabling them to relate what is learnt to their classroom experience" (p. 924). It is also worth mentioning that many public school teachers in Cambodia need to engage in additional income-generating activities to supplement their low salaries, making time and location for CPD activities a crucial concern (Hang, 2018; MoEYS, 2015).

The provision of expert support through professional dialogues/discussions tailored to address classroom issues was also regarded as a facilitating condition for good professional learning. This view is in line with the burgeoning body of literature on expert support in teachers' CPD. For instance, Darling-Hammond et al. (2017) found that CPD programs that provided teachers with expert support in the form of individual coaching and mentorship or workshops with groups of teachers resulted in professional learning gains among teachers. Whitehouse (2011) also proposed that external expert support affords teachers access to up-to-date pedagogical knowledge and assists them in transferring it to their classrooms. Likewise, Cordingley (2019) affirmed that CPD activities that make an impact on both teachers and students are buttressed by specialists or experts who strive to achieve depth in teachers' professional learning. Guskey and Yoon's (2009) analysis also indicated that ideas teachers gained from external experts brought improvements in student learning. The view of Cambodian in-service teachers toward expert support underlines the need for more specialized and personalized assistance in addressing specific issues pertaining to their classrooms, given the severe lack of such CPD support.

Sustained and coherent CPD

The findings of this study reveal that Cambodian in-service teachers see CPD as an ongoing process that consistently supports them in acquiring pertinent knowledge and skills that can be effectively applied in their classrooms. This view is parallel to a vast array of existing literature on effective CPD for teachers, as demonstrated by several studies and reviews (see, for example, Cordingley, 2019; Darling-Hammond et al., 2017; Desimone, 2009; Garet et al., 2001; Guskey &

Yoon, 2009; Hunzicker, 2011; Wei, Darling-Hammond, & Adamson, 2010; Whitehouse, 2011). For example, the study by Darling-Hammond et al. (2017) showed that CPD programs that triggered positive changes in classroom practices endured over time. Similarly, Guskey and Yoon (2009) asserted that in order for teachers to improve their teaching practices, they require time to “deepen their understanding, analyze students’ work, and develop new approaches to instruction” (p. 497). Nonetheless, a note of caution is that the time for CPD must be wisely utilized.

Furthermore, in-service teachers involved in this study hold that when CPD is sustained and consistent, it enables them to develop their professional knowledge and skills on a regular basis, prompts them to apply their newly acquired knowledge and skills in the classroom, and allows them to provide feedback on their practice and seek further support. Whitehouse (2011) suggested that sustained CPD encourages teachers to implement their new knowledge and skills, enabling them to explore their new practices and adjust them accordingly to suit their particular classroom settings. In adult learning theory, it is argued that time for reflecting on prior experience and making necessary changes to practice plays an important role (Darling-Hammond et al., 2017; Knowles, 1984a). Sustained CPD would allow teachers to do that. In addition, CPD that is coherent, built upon one another, and aligned with school and national policies has been shown to have positive effects on both teachers and students (Cordingley, 2019; Darling-Hammond et al., 2017; Garet et al., 2001).

The emphasis on sustained and coherent CPD among most in-service teachers underscores the significance of regular learning opportunities that are not limited to a few one-off workshops or training sessions per year. This provides a clear reflection of what in-service teachers in Cambodia desperately need in terms of opportunities for their professional development. Research has consistently shown that CPD opportunities for teachers in Cambodia remain highly constrained, ad hoc, and donor-driven, often failing to meet teachers' needs (Kheang et al., 2018; King, 2022; No & Sok, 2022; Phin, 2014; Tao & Kao, 2023).

School-based CPD

The findings of this study indicate that the majority of in-service teachers believe that school-based CPD is crucial for their professional development. They argue that conducting CPD activities within the school premises would provide them with an environment conducive to fostering inclusive, collective, and collaborative learning. Specifically, they believe school-based CPD can be widely accessible to teachers, provides them with access to appropriate school infrastructure and resources to facilitate their professional learning, and is better suited for reform types of CPD, such as teaching demonstrations, classroom observation, mentoring, or group meetings. These findings are in line with previous research that emphasizes the importance of school as a learning environment for effective CPD (Darling-Hammond et al., 2017; Guskey, 2003a; Joyce & Calhoun, 2010; Vescio, Ross, & Adams, 2008; Wei et al., 2010). Research has suggested that CPD is more likely to be effective when it is situated within authentic environments relevant to teachers, enabling them to see the connection between theory and practice (Darling-Hammond et al., 2017; Guskey and Yoon, 2009). This

suggestion is well aligned with situated learning theory, which emphasizes the authentic context in which learning occurs through social interactions (Bell et al., 2013; Lave & Wenger, 1991). Moreover, according to Wei et al. (2010), one feature of high-quality professional development pertains to “teachers’ collaborative work in school-based professional learning communities and learning teams” (p. 2). While school-based CPD can promote collaborative work within the school, it can also allow teachers to utilize available school resources and facilities to support their professional learning (Darling-Hammond et al., 2017). However, research has suggested that off-site CPD can also present teachers with several benefits despite some critical constraints, such as time commitment and associated costs (Casey, 2013; Odden et al., 2002). The benefits may encompass (a) access to a broader range of expertise, resources, and networks, which may be more challenging to obtain within the school setting, and (b) a broader perspective on educational issues and practices (Guskey & Yoon, 2009; Morris, Chrispeels, & Burke, 2003; Sol, 2020).

In Cambodia, where external CPD opportunities for teachers remain in severe shortage, it is unsurprising that most in-service teachers view school-based CPD as a viable approach for them. Furthermore, given their time constraint, incorporating collaborative forms of school-based CPD, such as mentoring and coaching, into their school life presents more possibilities for their CPD. In early 2021, MoEYS introduced a detailed handbook on establishing the professional learning community (PLC) at public education institutions to encourage professional learning at the school level (MoEYS, 2021a). However, very little public data on its take-up is available, and its impact remains to be seen.

6.2.2 Relevance to Teachers

Content focus

Drawing upon the findings presented in section 6.1.2, it is apparent that all in-service teachers who were interviewed for this study consider that effective CPD should be content-focused, particularly in areas that are most likely to lead to positive changes in their classrooms. As posited by adult learning theory, teachers as adult learners are self-directed (Knowles, 1984a) and thus have in mind learning content that they consider relevant to them. The content areas that in-service teachers in this study identified as essential for them included primary-level teaching strategies/methods, classroom management, and selection and production of teaching materials. Their suggestion substantiates an extensive discussion of previous research on effective CPD, which has brought to the forefront the significance of content focus in teachers' professional learning (Brown et al., 2001; Darling-Hammond et al., 2017; Desimone, 2009; Garet et al., 2001; Guskey 2003a; Guskey & Yoon, 2009; Hunzicker, 2011; Wei et al., 2010; Whitehouse, 2011). In particular, Darling-Hammond et al. (2017) and Wei et al. (2010) argued that CPD programs that focus on specific curriculum content and teaching strategies required to teach that content effectively in particular classroom contexts yield an impact on both teachers and students. Several studies, such as those of Brown et al. (2001), Garet et al. (2001), Guskey (2003a), and Guskey and Yoon (2009), concluded that CPD that extends teachers' subject matter content and subject-specific pedagogies are most likely to change teachers' classroom practices, which subsequently result in improvements in student

learning outcomes. Hunzicker's (2011) review also suggested that CPD is effective when it "involves the study and application of content and pedagogy with emphasis on student learning outcomes" (178). In addition, learning how to manage classrooms effectively and developing high-quality teaching materials are deemed essential for teachers and, therefore, are also advocated to be part of CPD content (Marjanovikj-Apostolovski, 2019; Oliver & Reschly, 2007).

Furthermore, a few in-service teachers emphasized the significance of digital literacy, pedagogy, and educational games in primary school teaching, suggesting that they should also be a focus for teachers' CPD. The suggestion for cultivating teachers' digital literacy and pedagogy as a CPD focus is consistent with the rising interest in equipping teachers with the necessary knowledge and skills so that they can effectively integrate technology into their teaching practices (Daly, Pachler, & Pelletier, 2009; Loudova, 2020; Spiteri & Chang Rundgren, 2017). The COVID-19 pandemic has dramatically accelerated this trend due to the abrupt need to ensure the continuity of education through online learning and teaching (Van Nguyen, Sit, & Chen, 2022; Wade & Mestry, 2021). In light of educational games, whether digital or not, research has shown that they can improve student engagement, motivation, and learning outcomes and thus can also be a potential area for CPD for teachers (Zeng, Parks, & Shang, 2020; Yu, Gao, & Wang, 2021).

In-service teachers' suggestion on the emphasis of CPD on specific content areas, such as primary-level teaching strategies, classroom management, production of effective teaching materials, digital literacy, and educational games, indicates their craving for ongoing professional development in areas that may not have been

adequately covered during their pre-service teacher education or that are critical for addressing their current teaching situations. For example, previous studies and reviews on pre-service teacher education in Cambodia raised concerns over the limited quality of teacher training programs due to a variety of limitations pertaining to teacher trainer qualifications, training resources and facilities, and balance between theory and practice, among others (see Chhinh, 2020; Pich, 2017; Prigent, 2016; Sot et al., 2019; Tandon & Fukao, 2015; Williams et al., 2016). As regards in-service primary school teachers in Cambodia, previous studies and reports have suggested that they face numerous challenges, such as large class sizes, lack of support for school supplies and resources, lack of parental support and involvement, student behavioral issues, and increasing need for the use of ICT (see Benveniste et al., 2008; Chhinh, 2002; Kheang et al., 2018; Ravet & Mtika, 2021; World Bank, 2018). In light of these challenges, their suggestions above for the content on which CPD should focus are of vital importance to them.

Meeting teachers' classroom needs

The findings suggest that in-service teachers who took part in this study value CPD activities that attend to their classroom needs and circumstances. In light of this, they emphasized the importance of identifying their needs before any CPD activity occurs, suggesting that a regular needs assessment should be conducted. Conforming to adult learning theory, this indicates a preference for hands-on, applied professional learning opportunities that help them deal with classroom issues and improve their teaching practices. Their view is also aligned well with the existing literature on effective CPD for teachers. It has been widely recommended that CPD be based on teachers' identified needs (Brown et al.,

2001; Darling-Hammond et al., 2017; Guskey, 2003a; Hopkins & Harris, 2000; Hunzicker, 2011; Muijs et al., 2004; Sol, 2020; Whitehouse, 2011). The identified needs are essential for effective, efficient, and meaningful CPD that ensures a positive impact at both classroom and school levels because it is relevant and supportive for teachers in addressing their professional needs as well as their classroom challenges (Hopkins & Harris, 2000). For that to happen, it is crucial to involve teachers in the process of identifying their own needs. This involves considering their personal and professional needs as well as learning preferences (Hunzicker, 2011). Reflecting on the theory of adult learning, Whitehouse (2011) offered a fascinating comment: “Involving teachers in the identification of learning needs acknowledges them as adult learners possessing self-direction, experience of their classroom environments, and readiness to learn the teaching practices that can help them solve problems in their classrooms” (p. 5). While agreeing that teachers’ needs must be attended to, Brown et al. (2001), Darling-Hammond et al. (2017), and Hunzicker (2011) advocated that it is also vital to meet those of the school, district, or state.

The desire of in-service teachers employed in this study for CPD to attend to their needs reflects the shortcomings in the current practice in Cambodia. Previous research in Cambodia has indicated that teachers’ CPD needs are relatively neglected. Most existing CPD opportunities for teachers are often ad hoc and donor-driven, both financially and technically (Kheang et al., 2018; King, 2022; No & Sok, 2022; Phin, 2014; Prigent, 2016; Tao & Kao, 2023). For this reason, as Tao & Kao (2023) described, they “tend to serve the donors’ interests and do not consistently meet the actual needs of practising teachers” (p. 16).

6.2.3 Assessment and Support

Well-defined evaluation and follow-up system

The findings of this study suggest that a well-defined evaluation and follow-up system is considered indispensable for successful CPD among most in-service teachers involved in the study. They stressed the significance of conducting a needs assessment prior to CPD activities, evaluating the effectiveness of CPD provision, monitoring the application of new knowledge and skills acquired from CPD experiences, collecting feedback on classroom practices, and offering more CPD support informed by gathered information. These findings corroborate existing literature on effective CPD for teachers (Craft, 2000; Darling-Hammond et al., 2017; Guskey, 2000; 2002; 2003a; Whitehouse, 2011). As previously discussed in section 6.2.2, identifying teachers' needs as well as those of the school plays a vital role in ensuring that teachers' engagement in CPD activities contributes to making a positive impact on their classrooms (see, for example, Darling-Hammond et al., 2017; Guskey, 2003a; Hopkins & Harris, 2000; Hunzicker, 2011; Muijs et al., 2004). After a CPD activity is provided, its effectiveness should be assessed. According to Guskey's (2000) five critical levels of CPD evaluation, this can involve collecting teachers' reactions to their CPD experiences and the knowledge and skills they gain from those experiences. Next is to monitor or follow up on teachers' implementation of new knowledge and skills and collect and provide feedback on their classroom practices. This process may be done at different time intervals since teachers require adequate time to explore new practices and realize the impact they have on them as well as their student

learning (Guskey, 2002). Collected information then needs to be analyzed and utilized to guide future CPD activities, which is one of the primary justifications for CPD evaluation (Guskey, 2000; 2002). As Darling-Hammond et al. (2017) put it, “Without a sense of what is working and why, it is hard to adopt and implement professional learning for teachers that is evidence-based and designed to address potential obstacles” (p. 22). On the whole, the ultimate goal of the CPD evaluation and follow-up system is to drive and foster continuous improvement rather than being an end in itself (Craft, 2000).

In-service teachers’ suggestion to establish a well-defined evaluation and follow-up system indicates a desire to hold concerned parties, including themselves, accountable for their professional growth, which can simultaneously lead to better student learning outcomes.

Benefit linkages

The findings of this study show that benefit linkages with CPD involvement are considered necessary for a successful CPD program by most of the in-service teachers interviewed. They view both financial and non-financial benefits as incentives to stimulate teachers’ active participation in CPD activities and recognize their commitment. However, the literature has no consensus on the linkages of benefits to teachers’ CPD engagement. Key studies and reviews on effective CPD for teachers, such as those of Cordingley (2019), Darling-Hammond et al. (2017), Desimone (2009), Garet et al. (2001), Guskey (2003a; 2003b; 2009), and Whitehouse (2011), did not result in the inclusion of an incentivized system for CPD engagement (both financial and non-financial) as part of key components of

effective CPD for teachers. Adult learning theory postulates that adults are self-directed in terms of their learning and tend to be internally motivated by the ultimate value of their actions (Knowles, 1984a). It is established that this intrinsic motivation can result in higher-quality learning, greater persistence, and better performance because they get involved in an activity for the benefit of the activity per se rather than for other external benefits (Deci & Ryan, 1985). It is therefore suggested that extrinsic rewards can undermine teachers' intrinsic motivation, leading to a narrow focus on compliance for rewards rather than the quality of learning outcomes (Fullan, 2016; OECD, 2019).

However, it has been acknowledged that CPD for teachers is very context-bound, and the criteria for its effectiveness are defined differently, meaning that existing conceptions of effective CPD may not be fully applicable to or sufficient for particular contexts (Darling-Hammond et al., 2017; Guskey, 2003b; 2009; Whitehous, 2011). In terms of incentives for teachers' engagement in CPD, when they are perceived to be complementary to intrinsic motivation, they can have the potential to improve teachers' performance and stimulate increased involvement (Deci & Ryan, 1985). An earlier work by Thomas R. Guskey pointed to two factors that made most CPD programs for teachers fail. One of them was the failure to identify what motivates teachers to engage in CPD activities (Guskey, 1986). Even though key conceptions of effective CPD found in the literature do not suggest any incentives for teachers' CPD engagement, some education systems incentivize their teachers for their involvement in CPD activities (Caena, 2011; MoEYS, 2019a; OECD, 2019; Tannehill et al., 2021). Moreover, in many OECD countries, teachers are provided with some form of compensation for achieving further formal

qualifications (OECD, 2019).

In Cambodia, salaries for teachers are low, making it hard for them to make ends meet. They earn about 60% of those with comparable qualifications and skills in the private sector (Hang, 2018). For example, public primary school teachers receive an average basic salary of approximately USD205 per month (MoEYS, 2019c), necessitating other income-generating activities to supplement their low salaries (Hang, 2018; MoEYS, 2015). In light of this, committing their time and energy to CPD would mean a compromise between improving professional knowledge and skills and earning additional income to support themselves and their families. The clarity of this circumstance was explicated by one of the in-service teachers interviewed (IST-05). That being said, linking CPD engagement with a transparent incentivized system, which includes both financial and non-financial benefits, is necessary to trigger teachers' active participation in CPD activities. This can be well related to the long-standing Maslow's hierarchy of needs theory, which posits that human beings need to feel more or less satisfied with their survival needs first (e.g., financial security) before progressing to pursuing the higher levels of needs such as being part of a group, a sense of accomplishment, respect from others, and self-actualization (Maslow, 1943; 1954).

Cambodia's MoEYS appears to be aware of the significant role of an incentivized system in spurring teachers to actively engage in CPD activities. In recent years, it has introduced some key frameworks and guidelines, such as *CPD Framework for Teachers and School Principals 2019*; *CPD Handbook: A Guide to CPD for Teachers, School Directors, and Education Specialists in Cambodia 2021*; and

System for CPD Credit Acquisition 2021, to instigate a new phase of lifelong learning in the education sector. Noticeably, these documents systematize how credits gained from involvement in CPD activities can be linked to career pathways, such as promotion, remuneration, qualification upgrading, and other professional benefits (Heng & Sol, 2022). Nevertheless, with its multi-phased strategy, the broader implementation and effectiveness of these policies and frameworks remain to be seen.

Support from the school and MoEYS

The findings of this study show that in-service teachers believe that both the school and MoEYS share responsibility in offering the necessary support to institutionalize CPD and ensure teachers' professional growth. They consider a collaborative effort between the school and MoEYS necessary to create favorable conditions for CPD and instill a whole-school spirit of lifelong learning, for example, cultivating a sense of professional learning community within the school and diversifying CPD initiatives for teachers. Previous research has recognized the vital role of schools in facilitating teachers' professional learning (Brown et al., 2001; Darling-Hammond et al., 2017; Nooruddin & Bhamani, 2019; Stevenson et al., 2016). From initial CPD planning to implementation to follow-up and evaluation, the role of schools is indispensable. It has also been advocated that the school's approach to CPD and the supportive school culture can influence teachers' beliefs and attitudes toward their CPD (Day & Gu, 2010; Tantawy, 2020).

In recent years, following a phased approach, Cambodia's MoEYS has implemented school-based management (SBM), providing targeted schools with

more autonomy and accountability in the school-wide management of finances and quality of teaching and learning, among others (MoEYS, 2018). This SBM approach will be expanded in the future, meaning that the role of schools in supporting teachers' CPD will be even more crucial. However, the support of MoEYS in teachers' CPD remains fundamental, especially regarding the development of CPD-related policies and frameworks and the provision of sufficient funding and resources for schools to implement CPD-related activities, just to mention a few. Precisely, MoEYS has subsequently introduced key CPD-related documentation, for example, the *Policy on CPD for Education Staff 2017*; *CPD Framework for Teachers and School Principals 2019*; *CPD Handbook: A Guide to CPD for Teachers, School Directors, and Education Specialists in Cambodia 2021*; *System for CPD Credit Acquisition 2021*; and the *Handbook on the Establishment of Professional Learning Community (PLC) at Public Education Institutions 2021*. Nonetheless, with the phased approach it takes, the institutionalization of CPD across schools nationwide could take up to 10 years (MoEYS, 2019a), pointing to the need to expand the scope of implementation so that more schools and teachers can receive the support they need to push CPD forward.

Summary

This chapter has presented and discussed key findings pertaining to the second research question, which focuses on the perspectives of in-service primary school teachers on the characteristics of effective CPD, considering their professional context of constrained resources and support. The chapter has shown that three overarching themes were considered necessary for effective CPD, including (1)

approaches to CPD, (2) relevance to teachers, and (3) assessment and support. The themes and their sub-themes, which constitute the characteristics of effective CPD, have been discussed along with the existing literature, reports, and policies, as well as the theoretical frameworks of adult learning theory (andragogy) and situated learning theory. The chapter has shown that most of the characteristics of effective CPD identified in the study fall within the assumptions or principles of the two theories, suggesting that incorporating the two theories can provide a more comprehensive framework for designing an effective CPD program for in-service primary school teachers.

CHAPTER 7: Challenges Hindering the Effective Provision of Teacher Education

This chapter presents and discusses key findings related to the third research question: “What challenges can hinder the effective provision of teacher education in Cambodia in terms of producing qualified primary school teachers with a solid knowledge base for teaching and enhancing in-service primary school teachers’ quality through in-service training/continuous professional development?” This research question has two parts: (1) challenges hindering the effective provision of pre-service teacher education and (2) challenges hindering the effective provision of in-service teacher education/CPD. Mirroring the structure of Chapters 5 and 6, this chapter starts with a presentation of key findings that emerged from the analysis of interview data, followed by a corresponding discussion section. Finally, the chapter concludes with a summary.

7.1 Challenges Hindering the Effective Provision of Teacher Education

7.1.1 Pre-Service Teacher Education

Several key challenges were identified through the analysis of interview responses from seven teacher trainers. They were seen as hindrances to providing effective pre-service teacher education in terms of producing primary school teachers with a firm grasp of the knowledge base for teaching. The challenges can be themed up, as shown in Table 7.1. The main themes and their sub-themes, which address the

first part of the third research question of the study, are presented in the order shown in Table 7.1.

Table 7.1

Challenges Hindering the Effective Provision of Pre-Service Teacher Education

Main Themes	Sub-themes	Number of Participants Contributed	Number of Mentions
Issues with Curriculum and Implementation	Curriculum overload	4	6
	Insufficient training on curriculum	4	5
	Limited opportunities for classroom observations and teaching practices	3	3
	Inadequate monitoring of the curriculum implementation	2	2
Constraints Related to Teaching and Learning Resources/Materials	Lack of basic resources and materials	4	11
	Sustainability issues	3	4
	Malfunctioning request process	3	3
Stakeholder's Limited Quality and Capacity	Concerns over the caliber of pre-service teachers	7	8
	Limited qualifications of some teacher trainers	3	3
	Limited leadership capacity	1	1
Other Issues	Limited motivation and commitment among teacher trainers	6	8
	Issues with teaching approaches	4	4

Issues with curriculum and implementation

The analysis of interview responses revealed some potential issues related to the curriculum and its implementation. The first issue was about curriculum overload.

It was perceived by more than half of the teacher trainers interviewed for this study that the curriculum was composed of too many lessons, making it difficult to implement fully. Given this fact, the teacher trainers needed to make a priority over important lessons because they could not delve deeply into everything in the curriculum. As a result, pre-service teachers/teacher trainees were largely reliant on their own self-study and research. The following statements provide attestation to these claims:

I have too many lessons to teach, and each lesson is long, so it is hard to fully implement the curriculum in an effective manner. (TT-02)

With too many lessons and the credit system (fewer in-class lectures), we cannot delve deeply into everything, so the extent to which the pre-service teachers learn largely depends on their self-study and research. (TT-03)

There are too many lessons, so we need to prioritize the important lessons. (TT-07)

To spell out her case concerning this issue, another teacher trainer provided an explicit example as follows:

There are too many lessons, and we don't have enough time to cover everything, requiring a lot of flexibility and creativity. ... For my subject, only one hour is allocated to a class per week, and in a semester, there are 15 weeks, so I basically have 15 hours (5 hours for content and 10 hours for practice) per semester. This is very little time. As a teacher trainer, I also need to attend professional development activities from time to time, and they can overlap with my teaching hours, so I find it hard to implement the curriculum fully. It is very challenging. That affects the learning gain of the pre-service teachers. (TT-06)

The second issue, which was also brought up by more than half of the teacher trainers interviewed, was insufficient training on the curriculum. The current

training curriculum was a shift from what was called the 'hour system' to the 'credit system.' When the new curriculum was introduced, the teacher trainers contended that they did not receive adequate training in implementing it and struggled to meet what was expected. They commonly shared the following comments:

Due to limited training on the curriculum, I find it hard to implement the curriculum as expected. I try to understand the curriculum by myself. ... Some recommended strategies are not clear. (TT-06)

When the training curriculum was updated, teacher trainers received very limited training on how to implement the curriculum. Therefore, teacher trainers often decide what and how to teach in the curriculum. (TT-07)

The third issue concerned limited opportunities for classroom observations and teaching practices. As part of the curriculum structure, pre-service teachers were given opportunities to observe real-world classrooms, conduct teaching demonstrations in their classes, and practice teaching at partner public primary schools. However, some teacher trainers claimed that such opportunities were insufficient because they were short-lived, focused on specific subjects, and did not occur regularly. The following comments serve to illustrate these views:

There are limited teaching demonstrations to help the pre-service teachers observe, practice, and receive feedback on teaching. (TT-01)

Every year, there is a practicum, including classroom observations, mentorship, and teaching practices at partner public primary schools. However, the period is quite short, and regular exposure to such activities seems very limited. (TT-02)

In the first year, the pre-service teachers learn the theoretical components of the curriculum, and then they have some opportunities to observe real-world teaching at partner public primary schools. In the second year of their training, they have a practicum in which they observe and practice teaching

for several weeks with the support of homeroom teachers at the partner schools. However, regular exposure to such opportunities is very limited, and the practicum focuses only on the Khmer language and mathematics. (TT-03)

Lastly, a few teacher trainers who were interviewed for this study raised another issue of inadequate monitoring of curriculum implementation. Despite the extensive curriculum, there was little oversight and monitoring of how the curriculum was being implemented in the classroom, leaving too much freedom to the teacher trainers. There was also a claim that some teacher trainers continued to adhere to the previous curriculum. The following statements highlight these assertions:

There is also a lack of monitoring efforts. Some teacher trainers keep following the previous curriculum, and there is no clear monitoring system to make sure that the new curriculum is fully implemented and followed. So, the implementation of the curriculum is mainly dependent on the teacher trainers' decisions. I think this is a problem. (TT-05)

The teacher trainers make decisions about what to teach in the curriculum. There is no clear procedure in place to monitor and evaluate the implementation of the curriculum. ... Some still use the previous curriculum. (TT-07)

In brief, the teacher trainers raised a number of potential issues concerning the curriculum and its implementation, which could hamper effective pre-service teacher education. These issues included curriculum overload, inadequate training on the curriculum, lack of opportunities for observations of real-world classrooms and teaching practices, and limited oversight of curriculum implementation.

Constraints related to teaching and learning resources/materials

The analysis found that there were also constraints related to teaching and learning resources/materials referred to by several teacher trainers. The first constraint concerned the lack of basic resources and materials to support the teaching and learning process. A few teacher trainers explicitly raised concerns about the shortage of reading resources for pre-service teachers to do self-study and research activities. This was particularly the case for non-science subjects owing to limited assistance from key development partners such as JICA and VVOB-Education for Development. As they explained:

There are also not enough books and other reading resources in the library for the pre-service teachers to do self-study and research. There are mainly core textbooks of the primary school curriculum. ... I think the lack of learning and teaching resources significantly affects the quality of the training. (TT-06)

The library mainly has core textbooks of the primary school curriculum (Grades 1-6). ... no various reading resources for pre-service teachers to do self-study and research. ... JICA and VVOB-Education for Development mainly support science-related subjects. (TT-07)

The shortage of reading resources, especially textbooks, was also echoed by another teacher trainer, but he added that existing textbooks were outdated while the curriculum was upgraded. He explicated:

The curriculum document was upgraded, but the textbooks are still old. For example, the textbook for my subject, "General Knowledge," was published in 1997. Textbooks should be updated every five years to include new developments and stay up-to-date with new educational trends. (TT-05)

Another teacher trainer who taught science subjects appeared to acknowledge the

greater availability of experimental equipment due to ongoing aid from development agencies such as JICA and VVOB-Education for Development. However, she asserted that typical substances and materials required to operate with the equipment were in significant shortage. She spelled out her assertion in the following comment:

We have more experimental equipment but greatly lack typical substances and materials (both organic and chemical) to use with the equipment. (TT-04)

The second constraint pertaining to teaching and learning resources/materials was the sustainability issue. A few teacher trainers who participated in this study reported that because of the lack of teaching and learning resources, they resorted to using their own finances to purchase essential yet affordable teaching and learning resources. Occasionally, they asked the pre-service teachers to share the cost or produce them whenever feasible. Moreover, one of them considered that the significant reliance on external support from development agencies such as JICA without substantial backing from the government (MoEYS) implied sustainability issues going forward. They explicitly explained this matter as follows:

Due to a lack of accessible resources, I often spent my own pocket money to buy the necessary but low-priced resources, especially for teaching demonstrations, and sometimes I asked the pre-service teachers to share the cost or produce them at home whenever possible. (TT-06)

Recently, there has been significant support from JICA and VVOB-Education for Development; we now have, to some extent, more learning infrastructure and resources at the teacher education college. However, the support from the government (MoEYS) is still minimal, so it is an issue of sustainability going forward because we cannot always get support from external sources. (TT-03)

The last constraint appertaining to teaching and learning resources/materials was attributed to the malfunctioning process for acquiring resources/materials to support the teaching and learning process. A few teacher trainers who were interviewed for this study indicated that a budget request process was in place to buy necessary items for educational activities. However, their requests frequently remained unfulfilled or were not handled promptly. The following remarks underscore their respective experiences:

We were told that we could make a request to the management team if we needed something, but usually, we could not get most of what we needed and not on time. (TT-03)

There is a budget request process to purchase what we need, but it's not timely enough to respond to our daily needs. Some substances and materials cannot be bought and stored for an extended period of time, so when we need them, we need to buy them in a short period of time. (TT-04)

Sometimes, I made requests to the school management for a small budget to buy what my pre-service teachers and I needed for teaching and learning activities, but I did not get what I wanted most of the time. The chance is like 1/10. (TT-06)

In summary, several teacher trainers highlighted various impediments pertaining to teaching and learning resources. They encompassed the lack of basic resources/materials, sustainability issues, and the malfunctioning process of acquiring the necessary items to aid teaching and learning activities. These constraints were deemed to impede the effective provision of pre-service teacher education.

Stakeholder's limited quality and capacity

The analysis of interview responses presented some concerns over the limited quality and capacity of front-line stakeholders, namely pre-service teachers, teacher trainers, and leadership team members. The prevailing concern expressed was the caliber or quality of pre-service teachers. All the teacher trainers who took part in this study appeared to acknowledge some improvements in pre-service teachers' caliber in recent years when they (pre-service teachers) joined the teacher training program; however, they observed that a significant number of the admitted pre-service teachers were not among high-performing high school graduates. One of the teacher trainers attributed this to the low perception of the teaching profession, especially with regard to teachers' low compensation, which did not attract high-performing graduates from high school. Concerning the caliber of pre-service teachers, another teacher trainer found it challenging to support them in developing a strong knowledge base for teaching when they had limited capacity and a lack of motivation. The following remarks highlight all of these claims:

This issue (limited caliber of admitted pre-service teachers) still exists to some extent. Many pre-service teachers are not high-performing graduates from high school, so they are not so active when working in groups or involved in class discussions. It is hard to help them build a strong knowledge base for teaching when their capacity is limited, and their motivation is low. (TT-01)

I think this issue is linked to the perception of the teaching profession, especially toward the low compensation, which is not so attractive for high-performing high school graduates. (TT-02)

I can still see this issue even though it seems to have gotten better in recent years. (TT-07)

In addition, there existed concerns over the quality of teacher trainers themselves. A few teacher trainers posited that notwithstanding the fact that most teacher trainers held at least a bachelor's degree, they lacked up-to-date knowledge and skills, such as ICT skills and new teaching approaches, particularly among those advanced in age. A teacher trainer added that some teacher trainers did not know English, making it hard for them to research and teach in a more demanding environment. The following statements underscore their observations:

A large majority of the teacher trainers have at least a bachelor's degree. However, some of them, especially aging teacher trainers, lack up-to-date knowledge and skills, such as ICT skills and new teaching approaches, to teach in the 21st-century context. (TT-02)

There are also some teacher trainers who do not keep up with ICT and do not know English, so it's hard to teach and research in a new environment where ICT skills and more advanced teaching approaches are required. (TT-04)

Apart from the concerns over the quality of admitted pre-service teachers and teacher trainers themselves, a teacher trainer articulated another concern regarding the limited capacity of some management team members. According to his observation, some management team members lacked the leadership and administrative capacity to effectively lead the teacher training institution, suggesting that they should obtain more advanced qualifications. In his own words:

I observe that some of the management team members lack the leadership and administrative capacity to lead the center in an efficient manner. ... They should have higher qualifications. (TT-01)

Overall, all the teacher trainers consistently expressed concern over the limited caliber of the pre-service teachers admitted to the training program. The limited quality and capacity of teacher trainers themselves and some management team members were also raised by some teacher trainers. They considered these issues to contribute to hampering the effective provision of pre-service teacher education.

Other issues

The analysis of interview responses also revealed other issues, such as limited motivation and commitment among teacher trainers and issues with teaching approaches. Almost all the teacher trainers who were interviewed for this study expressed, to some extent, their lack of motivation and commitment to their profession. They attributed their lack of motivation and commitment to the load of work they were obliged to undertake and the meager remuneration they received. Some teacher trainers who had some free time from their primary responsibilities were reported to moonlight as teachers at private schools in their off-hours. Moreover, given their low salaries, when paid seminar/workshop opportunities were available, they always insisted on participating to receive daily allowances. The following remarks illuminate their claims:

With the credit system, I am required to perform more tasks than before. ... The salary is low, but I don't have time to work for other schools. That affects my motivation and commitment to my job. Whenever there are seminar/workshop opportunities, we always demand to join as we can get per diem payments. That's the reality. Some teacher trainers moonlight as teachers at private schools for a few free hours at the teacher education

college. (TT-04)

Because our salaries are low, we need to do something else to supplement our meager salary, especially to teach at private schools. This unarguably affects our motivation and commitment, as well as our teaching effectiveness, due to inadequate focus and planning. (TT-05)

As for another issue, despite the increased emphasis on employing innovative teaching approaches in recent years, such as inquiry-based learning (IBL) and project-based learning (PBL), a few teacher trainers observed that conventional lecture-based or teacher-centered approaches continued to be prevalent among some teacher trainers. The comments below serve to exemplify their observations:

Some teacher trainers just project the PowerPoint slides on the board, talk through them, and ask the pre-service teachers to copy off the slides, so the pre-service teachers just listen and learn too many theories in the classroom – it shouldn't be like that. I noticed that the teaching method employed by some teacher trainers is still lecture-based. (TT-01)

More advanced teaching strategies/approaches, such as inquiry-based learning (IBL) and project-based learning (PBL), have been given an emphasis in recent years. However, I noticed that the lecture-based/teacher-centered approach remains dominant among some teacher trainers. (TT-03)

A teacher trainer attributed such deficiency to the little attention paid to planning IBL lessons due to the much work that had to be put into it. She also acknowledged that there had been a greater emphasis on incorporating the IBL approach into the training program in recent years. As she put it:

In recent years, the training program has placed an emphasis on implementing inquiry-based learning (IBL). However, I noticed that some teacher trainers paid little attention to planning IBL lessons due to workloads. (TT-04)

To sum up, almost all teacher trainers who took part in the interview raised an issue of their lack of motivation and commitment to their job, which they ascribed to their low salaries and workloads. Another issue was directed toward the employment of conventional lecture-based approaches, which remained in wide practice among some teacher trainers. The teacher trainers considered these issues to have an unfavorable effect on the effectiveness of pre-service teacher education.

7.1.2 In-Service Teacher Education/CPD

The analysis of interview responses from 12 in-service primary school teachers resulted in a number of potential challenges, which were thought to hinder the effective provision of in-service teacher education/CPD in terms of enhancing in-service primary school teachers' teaching quality. As presented in Table 7.2, the challenges can be categorized into various main themes. The main themes and their corresponding sub-themes, which address the second part of the third research question of the study, are presented in the order shown in Table 7.2.

Table 7.2

Challenges Hindering the Effective Provision of In-Service Teacher Education/CPD

Main Themes	Sub-themes	Number of Participants Contributed	Number of Mentions
Lack of CPD Support	Very limited CPD opportunities	12	25
	Lack of support from the school and MoEYS	7	7

Ineffective Approaches	Ad hoc approach	8	11
	One-off workshop/training course	6	9
	Cascade model	4	7
Irrelevance to Teachers	Not meeting teachers' needs	7	10
	Ineffective content	2	2
Teachers' Reluctance to CPD Engagement	Conflicting or inconvenient time	6	8
	Effect on income	2	3
	Perceived burden	1	4
	Lack of interest	1	2
	Inconvenient location	1	1
Other Issues	Ineffective use of the monthly TTM	3	4
	Lack of resources	1	1
	Lack of evaluation and follow-up system	1	1

Lack of CPD support

During the study, in-service teachers reported that insufficient CPD support was a critical impediment to effective CPD. The most mentioned challenge concerned the minimal availability of CPD opportunities for teachers. With the exception of the monthly TTM, which was deemed a customary means for teachers to enhance their professional knowledge and skills and was entrenched within the system, all in-service teachers disclosed that other in-service training/CPD opportunities available to them were very limited. They consistently shared the following statements:

There is almost no in-service training opportunity for primary school teachers in my school. ... The learning opportunity for teachers is primarily done through the Thursday Technical Meetings. (IST-07)

Other than the Thursday Technical Meetings, there seem to be very few

other in-service training opportunities for teachers. (IST-10)

Sharing the same experience but with an emphasis on workshop/training opportunities, an early career teacher said such opportunities have been almost nonexistent since becoming a teacher. She put it:

Since I became a teacher, workshops or training courses available to me have been almost nonexistent. (IST-02)

Many in-service teachers attributed the severe shortage of CPD opportunities to the overall lack of CPD support they receive from their schools and MoEYS. The following comments illustrate this point:

There seems to be no significant support from the school and MoEYS for our professional development. It mainly depends on teachers' own willingness and commitment. (IST-06)

... not much support from the school or MoEYS in terms of regular in-service training for teachers. (IST-10)

Another in-service teacher remarked that despite his desire to share his new knowledge and skills with his fellow teachers, his request for the school director to arrange a professional learning activity within the school went unheeded. That made him feel there was no conducive environment for professional learning within his school. As he explicated:

There seems to be no conducive environment for professional learning within my school. When I have learned something new and wanted to share it with other teachers, I have not received any support from the school director to make such an opportunity happen. (IST-08)

Overall, the lack of CPD support, including limited CPD opportunities accessible to teachers, coupled with the overall lack of support from the school and MoEYS, was considered a key hindrance to the effective provision of CPD for teachers.

Ineffective approaches

Numerous in-service teachers who participated in this study identified a number of approaches to CPD that were deemed ineffective. In particular, three approaches emerged as common sub-themes among all the responses: ad hoc approach, one-off workshop/training course, and cascade model of CPD delivery. Almost three-quarters of the in-service teachers noted that while CPD opportunities were already limited, they were often ad hoc in nature, meaning that they were only provided when specific learning needs arose. As one of them observed:

The limited CPD opportunities we received were often offered ad hoc, for example, a workshop on a new guidebook or new curriculum. (IST-01)

Some other teachers raised the case of school closures during the COVID-19 pandemic to support their claims about the ad hoc approach. They stated that due to the need to teach online during the school closures, MoEYS and its relevant departments conducted a range of online training on digital literacy in order to enable teachers to teach online. The statements below illustrate this point:

Because of school closures during the COVID-19 pandemic, MoEYS and its relevant departments offered a range of online professional development opportunities to help build teachers' digital literacy needed to teach online. (IST-08)

CPD opportunities offered by MoEYS tend to be ad hoc, for example,

during the COVID-19 pandemic when digital literacy is necessary. (IST-11)

Likewise, half of the teachers expressed frustration with the sort of 'one-off and ad hoc' workshop/training course, which was seen as insufficient to support the sustained professional growth of teachers and changes in the classroom. As an in-service teacher elucidated:

Except for the Thursday Technical Meeting, the one-off workshop or training course is the most popular form of in-service training for teachers. While it is often ad hoc, this kind of one-off workshop or training course will not significantly support our professional growth and trigger positive changes in the classroom. (IST-04)

Several other in-service teachers showed disapproval toward the utilization of the cascade model of delivery. They viewed this top-down approach, which involved a small group of teacher technical team leaders and/or school directors/deputy school directors receiving the training and then passing it on to their colleagues, as ineffective. A few of them also observed that those who did not directly receive the training barely benefited from this passing-on model of delivery. They shared the following comments:

Only school directors, deputy school directors, and/or teacher technical team leaders are often involved. After they participated in the workshop or training, I noticed nothing significant was shared with teachers who were not designated to attend. (IST-01)

Usually, the school selects teacher technical team leaders at each grade level to attend training courses or workshops. Then, the teacher technical team leaders train those who are not selected to attend. From my experience, there is almost no such passing-on training for those not selected to attend. ... I don't think this cascade model is effective. (IST-05)

Teacher technical team leaders are usually assigned to participate and are

expected to pass on what they learn to other teachers in the school. I think this model is not effective. (IST-10)

In summary, it was found that CPD approaches such as ad hoc approach, one-off workshop or training course, and cascade model of delivery were deemed a constraint to the effective delivery of CPD.

Irrelevance to teachers

As regards this theme, more than half of the in-service teachers interviewed expressed their concern that the limited CPD opportunities they received often failed to meet their needs. This was attributed to the prevalent ad hoc approach that was often adopted. The following comments highlight this concern:

In most cases, they [CPD contents] are what MoEYS wants teachers to know rather than addressing teachers' professional development needs. (IST-01)

They had no idea what teachers on the ground needed the most, so the training was not so helpful. (IST-05)

Most in-service training activities are ad hoc and often do not address our needs. (IST-09)

A few other in-service teachers drew attention to the fact that the content of CPD was not so helpful because it did not lead to the enhancement of classroom instructions. As one of them put it:

Most of the very few workshops and training courses I attended did not focus on improving classroom instructions through enhanced content knowledge and teaching skills but on life skills such as healthy eyes, dental

health, and personal hygiene. They are not very helpful. (IST-03)

Overall, several in-service teachers regarded the lack of relevance in CPD content and its failure to address their needs as a challenge that could impede the effective provision of CPD.

Teachers' reluctance to CPD engagement

Several in-service teachers openly expressed their reluctance to engage in CPD activities. This reluctance was attributed to several factors which were seen as significant constraints to effective CPD. Those factors included conflicting/inconvenient time, effect on their income, perceived burden, lack of interest, and inconvenient location. Half of the in-service teachers interviewed associated their reluctance to engage in CPD activities with conflicting/inconvenient time. Many teachers had packed schedules because they needed to be involved in other jobs, so they would find it difficult to squeeze in any extra activities that conflicted with their schedules. As a few of them shared:

Time also affects our commitment to CPD activities if it is not convenient because we have other jobs to do. (IST-01)

Regarding time for CPD activities, if it is not during working hours, I find it hard to take part as I have another job to do. (IST-03)

Also, concerning time for CPD, a few other in-service teachers made it clear that they were keen on learning new things and would try to participate in case of a suitable time. They explicated:

I am keen on learning new things and will try to participate in any CPD opportunities if the time is suitable. (IST-11)

I like learning something new, but sometimes, time is a big problem. (IST-12)

In addition to the conflicting/inconvenient time as a contributor to teachers' reluctance to CPD, two in-service teachers attributed their reluctance to the effect on their income. They pointed to the long-standing issue of low teacher salaries, which compelled them to do multiple jobs for additional income. They considered this circumstance a trade-off between improving their professional knowledge and skills and feeding their famished families. One of them made this a crystal-clear case in her comment below:

One thing that may affect my commitment to CPD activities is the impact on my income. As you know, teachers in our country are not well paid; oftentimes, teachers need to do multiple jobs to earn additional income to support themselves and their families. Therefore, if participation in CPD activities significantly affects our incomes, we need to make a trade-off between enhancing our knowledge and skills and feeding our families. (IST-01)

Apart from the time and effect on income, an early career teacher shared his observation about the perceived burden of CPD engagement among his fellow senior teachers. He noticed that old teachers seemed reluctant to learn new things out of their comfort zone, for example, a new teaching approach or an ICT skill. He added that they perceived it as a new burden for them. The comment below points to his observation:

... old teachers seem reluctant to learn new things, such as new teaching approaches or ICT skills. They feel it's a new burden for them. (IST-08)

The same in-service teacher linked this perceived burden to the lack of interest in CPD among his fellow senior teachers. As he put it:

Due to this perceived burden, they don't seem to care about participating in CPD activities. (IST-08)

Besides, another in-service teacher linked his reluctance to engage in CPD activities to the inconvenient location or venue where CPD activities take place. He explained his point:

Places where CPD activities are arranged may also influence my decision on whether or not to participate, especially if I have to travel a considerable distance. (IST-05)

Overall, several factors, including inconvenient time, effect on income, perceived burden, lack of interest, and inconvenient location, contributed to teachers' reluctance to engage in CPD activities. These factors were considered hindrances to effective CPD.

Other issues

During the study, some in-service teachers also brought up a number of other issues, including the ineffective use of the monthly TTM, the lack of resources to implement new learning from CPD experience, and the lack of evaluation and follow-up system for teachers' CPD. With regard to the monthly TTM, which is the only regular platform for teachers to enhance their knowledge and skills and exchange best practices with their colleagues, a few in-service teachers voiced

their concerns over the improper utilization of this unique opportunity. They emphasized that the monthly TTM was not utilized effectively for teachers' professional learning. Instead, the school directors sometimes used this avenue to disseminate news from MoEYS and/or discuss general issues and plans for school development. There were also numerous occasions where the monthly TTM was not given due importance, and as a result, no meaningful professional learning occurred among the teachers. The quotes in Table 7.3 below highlight these points:

Table 7.3

In-Service Teachers' Comments on the Ineffective Use of the Monthly TTM

Participants	Illustrative Quotes
IST-01	For the regular monthly Thursday Technical Meeting, the extent to which professional learning takes place depends on the school and the commitment of teachers. Oftentimes, this platform is just taken for granted; there is no specific professional learning among teachers.
IST-09	Sometimes, the school director uses the monthly Thursday Technical Meeting to report issues related to the school and school development plans rather than to improve teachers' knowledge and skills in teaching.
IST-11	The monthly Thursday Technical Meeting is not entirely used for the professional learning purposes of teachers. The school director sometimes uses it to share new information from MoEYS and discuss issues and development plans in the school.

Moreover, while acknowledging the learning gains from his CPD engagement, an in-service teacher pointed to the shortage of resources to implement what he learned from his CPD experience. He explicated this in the following statement:

Some learning opportunities helped me gain new knowledge and skills, for

example, using the Scratch application to teach mathematics. However, due to limited learning resources at my school, the new knowledge and skills are not practical for my classroom. (IST-08)

Another in-service teacher alluded to the lack of a system in place to identify teachers' needs prior to the CPD provision and monitor their classroom implementation after their CPD experience. As she phrased it:

There is also a lack of a system to assess teachers' needs and track whether teachers implement what they have learned from their CPD experience in their classrooms. (IST-01)

In summary, other issues, such as the ineffective use of the monthly TTM, the shortage of resources to implement new learning from CPD engagement, and the lack of an evaluation and follow-up system for teachers' CPD, were believed to constrain the effectiveness of CPD.

7.2 Discussion of the Findings

In order to maintain clarity and consistency, the discussion of the findings in this section follows the same sequence as the presentation of the findings.

7.2.1 Pre-Service Teacher Education

Issues with curriculum and implementation

The findings presented in section 7.1.1 above indicate that several potential issues pertaining to the training curriculum and its implementation might have constrained

the effectiveness of pre-service teacher education. The issues include curriculum overload, insufficient training on the curriculum, limited opportunities for classroom observations and teaching practices, and inadequate monitoring of curriculum implementation.

One of the significant issues identified is curriculum overload, whereby the training curriculum encompasses too many lessons, thus impeding their capacity to implement it fully. This finding is consistent with a study conducted in Cambodia many years ago when the previous curriculum was still in use (Prigent, 2016). This shows that even though the current training curriculum (following the credit-based system) is a revised iteration of its antecedent, it is still deemed to have too many lessons that cannot be fully taught within the available time. This circumstance can lead to a lack of depth in learning due to the so-called 'mile-wide, inch-deep' content coverage (OECD, 2020). It can also result in neglect of some important lessons because the teacher trainers need to prioritize what to teach (see the comment of TT-07 in section 7.1.1). Moreover, curriculum overload can also undermine pre-service teachers' learning quality due to constant stress and pressure to meet assignment requirements (OECD, 2020).

Another issue identified in the findings is insufficient training on the new credit-based curriculum, leading to challenges in its implementation. Past studies on pre-service teacher education in Cambodia uncovered a lack of coordination between various MoEYS departments and teacher training institutions, resulting in the inconsistent implementation of new elements added to the curriculum as well as the provision of necessary training for concerned stakeholders (Prigent, 2016;

Tandon & Fukao, 2015). The inadequate training on the curriculum for teacher trainers, especially when there was a shift from one curriculum system to another with greater instructional expectations, as was the case, indeed affects the quality of teaching and learning. This limitation can be because they do not fully understand the curriculum goals, content and materials, instructional approaches, and assessments, which are the key components of most, if not all, school curricula (Bruner, 1977; Tyler, 2013).

The limited opportunities for classroom observations and teaching practices were also identified as an issue, with some teacher trainers feeling that such opportunities were not sufficient. Based on the curriculum document, a practicum equivalent to three credits shall be assigned for the first year, while another ensuing practicum equivalent to nine credits should be assigned for the second year of the training (MoEYS, 2017). In total, the practicum lasts about 14 weeks over the course of two years. The practicum comprises classroom observations, semi-teaching practices, and immersive teaching practices in lower primary grades (1-3) and higher primary grades (4-6) at partner public primary schools under the supervision of a practicum committee consisting of diverse stakeholders (Prigent, 2016; Tandon & Fukao, 2015). At the training institution, pre-service teachers are, on very limited occasions, tasked to conduct teaching demonstrations or microteaching with their peers to develop their teaching skills. However, these opportunities are deemed inadequate to equip pre-service teachers with solid teaching skills and link theory to practice. As the literature suggests, an intense practicum is vital to any pre-service teacher education because it supports pre-service teachers in applying theoretical concepts they are learning to real-world

classrooms and developing teaching skills while receiving mentorship and guidance from well-experienced classroom teachers and teacher trainers (Allen, 2003; Darling-Hammond, 2014; Muzaffar et al., 2011; Smith & Lev-Ari, 2005; Ulvik & Smith, 2011). Darling-Hammond's (2006) review of pre-service teacher education programs recommended that pre-service teachers should have at least 30 weeks or 900 hours of extended clinical experiences in genuine classroom situations to develop promising teaching skills. Moreover, many OECD countries have emphasized providing pre-service teachers with much more time in authentic classroom settings to balance theory and practice (Schleicher, 2012).

The last identified issue pertaining to curriculum and implementation concerns inadequate monitoring of curriculum implementation. This lack of monitoring leaves too much freedom for teacher trainers to make instructional decisions in terms of content and teaching approaches. Some teacher trainers were even reported to continue following the previous curriculum. Tandon and Fukao's (2015) study on pre-service teacher education in Cambodia many years ago revealed a critical lack of connection between MoEYS, curriculum goals and guidelines, and what really happened at the training institutions. They further reported that teacher trainers worked in an isolated environment without a clearly defined system for assessing the training effectiveness (Tandon & Fukao, 2015). From the present study's findings, it appears that the teacher trainers continue to work with little support, and the lack of clear mechanisms to monitor and evaluate the training effectiveness, particularly the curriculum implementation, remains an issue. Previous research has suggested that monitoring and evaluation are crucial for effective curriculum implementation because they ensure that stated objectives

are met and, if necessary, corrective actions can be taken in a timely manner during the implementation process (Mojkowski, 2000; Sinnema, 2011). Thus, failing to do so may result in misalignment with expected standards and inconsistency in quality.

Constraints related to teaching and learning resources/materials

The findings presented in section 7.1.1 above highlight three significant constraints related to teaching and learning resources/materials, including the lack of basic resources/materials, sustainability issues, and the malfunctioning process for acquiring resources/materials to support the teaching and learning process.

The first constraint concerns the lack of essential resources/materials to support the teaching and learning process, especially reading resources and typical substances and materials required to conduct scientific experiments in science-related classes. As the findings suggest, this constraint is particularly the case for non-science subjects due to the fact that key development partners, such as JICA and VVOB, tend to channel their support toward science-oriented disciplines. Many years ago, Tandon and Fukao's (2015) study reported that TTCs in Cambodia were well-equipped with libraries and laboratories, with the Regional Teacher Training Centers (RTTCs) being comparatively more well-appointed than PTTCs. The findings of the present study seem inconsistent with their report. However, regarding reading resources, all TTCs involved in their study reported that about 50% of pre-service teachers needed to share books that are texts and that ICT resources were limited (Tandon & Fukao, 2015). The present study's findings align with Dy et al. (2019) and Prigent (2016). Dy et al. (2019) reported

that PTTC libraries are not ideal for learning due to their lack of up-to-date and useful books, as well as their limited variety of reading materials. Prigent's (2016) study found that libraries at PPTCs did not "provide a great variety of books that would allow students to diversify their reading and research activities" (p. 32). ICT materials were also found to be limited (Prigent, 2016). In low- and middle-income countries, funding for teacher education is often a constraint, impeding teacher education institutions from having the necessary resources and facilities required to effectively facilitate teacher education programs (Association for the Development of Education in Africa, 2016; Tahira et al., 2020; Taylor & Robinson, 2019). Muzaffar et al. (2011) advocated that the efficient administration of teacher preparation programs requires sufficient infrastructure and resources, such as high-quality learning facilities, well-appointed libraries, and diverse teaching and learning materials.

The second constraint identified in the findings pertains to the matters of sustainability. Due to inadequate access to essential teaching and learning resources, the teacher trainers reported using their own finances to purchase what they needed most for their instructional activities. When practical, pre-service teachers were also asked to share the purchasing cost of the resources or make them at home. Without a functioning institutional mechanism for procuring and utilizing teaching and learning resources, resorting to personal finances for this purpose is a clear indication of a lack of sustainability in the long term. Moreover, as the findings of this study suggest, there was too much dependence on external assistance from development partners. As a matter of fact, Cambodia's education system in general and teacher education in particular have persistently depended

on the substantial financial and technical support of international development agencies, including, among others, GPE, JICA, UNICEF, UNESCO, USAID (United States Agency for International Development), World Bank, and Asian Development Bank (ADB) (Ashida & Chea, 2017; Kaewkumkong, 2020; Sok & Bunry, 2021). Some other low- and middle-income countries with limited national resources were also reported to rely heavily on external assistance from international development agencies or organizations (Martin, 2018; UNESCO, 2023b). However, too much reliance on such external assistance without considerable government support or funding raises concerns over sustainability going forward.

Finally, the findings also show that there was a malfunctioning process of acquiring necessary items for teaching and learning activities, with budget requests frequently being unfulfilled or not handled promptly. The management of public education in Cambodia is deeply rooted in the conventional top-down approach, which is highly bureaucratic and centralized (Dy, 2015). With this approach, getting tasks done usually involves multiple layers of decision within the established hierarchy. Although initiatives to decentralize the system have been implemented, the pace of advancement has been sluggish, as Dy (2015) noted. Therefore, when it comes to budget requests from teacher trainers to purchase teaching resources/materials, there is a protracted delay in the disbursement of funds, resulting in a failure to satisfy their needs in a timely manner. A recent education congress report also acknowledged that a time-intensive budget payment process for TTCs constituted a challenge that necessitated improvement (MoEYS, 2022). The limited availability of financial resources may also contribute

to the constraint because public funding for the education sector in Cambodia remains relatively low despite continued increases (UNESCO Institute for Statistics, 2022).

Stakeholder's limited quality and capacity

The findings presented in section 7.1.1 point to several concerns and issues regarding the quality and capacity of front-line stakeholders, including pre-service teachers, teacher trainers, and management team members.

The prevailing concern raised by all the teacher trainers involved in the study is the limited quality of pre-service teachers recruited to join the teacher training program. While acknowledging some improvements in pre-service teachers' quality in recent years, all the teacher trainers observed that admitted pre-service teachers were not among the high-achieving graduates from high school. One of the teacher trainers attributed the inability to recruit outstanding high school graduates to the unfavorable image of the teaching profession due to the teachers' low social and financial status. These findings concur with the developing literature on pre-service teacher education in Cambodia (Benveniste et al., 2008; Hang, 2018; MoEYS, 2015; No & Heng, 2017; Pich, 2017; Prigent, 2016; Sot et al., 2022; Tandon & Fukao, 2015). For instance, Hang (2018) reported that "one major obstacle to attracting high-quality candidates is the perceived low social status of the teaching profession across the country. Teachers currently earn salaries that are only 60% of what other professionals with similar education and skills qualifications can earn in the private sector" (p. 297). In addition, it was reported by MoEYS (2015) that a significant proportion of pre-service teachers, specifically

80%, who were recruited to undertake teacher training at TTCs attained only Grades D and E on the A-E grading scale. Prigent (2016) and Tandon and Fukao (2015) also revealed the difficulties of many TTCs in recruiting qualified pre-service teachers. This issue is also common in many other countries, as teaching is often viewed as a less attractive profession compared to other fields that offer higher compensation and status (Moon, 2013; Taylor & Robinson, 2019; UNESCO-IICBA et al., 2017; World Bank, 2009). This has led to a shortage of high-quality candidates applying for teaching positions, and thus, many teacher training institutions are forced to admit candidates who may not meet the desired standards (UNESCO, 2023b). Substantial research has suggested that ensuring the enrollment of the right individuals into teacher preparation programs is imperative to cultivate high-quality teachers (Darling-Hammond et al., 2010; Education Commission, 2019; Tatto, 2008). OECD's TALIS report involving 48 countries and economies worldwide appealed to the need to make the teaching profession financially and intellectually attractive to get the most competent and exceptional individuals to pursue the profession (OECD, 2018a).

Another issue identified in the findings pertains to the limited quality of teacher trainers themselves. The findings demonstrate that even though most teacher trainers hold a minimum of a bachelor's degree, some teacher trainers contended that they were deficient in terms of ICT skills, new teaching approaches, and the English language ability required to teach and research in a more demanding environment. This holds particularly true among senior teacher trainers who were subjected to the antecedent selection procedure, which was comparatively less stringent (Sot et al., 2019). A few previous key studies on pre-service teacher

education in Cambodia indicated some consistency with these findings. It was found that the average education completed by PTTC teacher trainers was 14.7 years, suggesting completion of secondary education and some tertiary studies (Tandon & Fukao, 2015). Sot et al. (2019) argued that this average year of education completed by PPTC teacher trainers was deceptive, claiming that 45% of PTTC teacher trainers did not complete upper secondary school education. Moreover, Prigent (2016) reported that many PTTC teacher trainers did not possess classroom experience; they simply applied and eventually got assigned to a PTTC. In this case, their knowledge is comparatively lower than that of their pre-service teachers (Prigent, 2016). For example, Tandon and Fukao (2015) conducted a mathematics knowledge assessment and found that teacher trainers' mathematics knowledge was slightly above that of average Grade 9 students and lower than their pre-service teachers. In addition, Prigent's (2016) study revealed that pre-service teachers at PTTCs felt that some of their teacher trainers were not legitimate enough in terms of pedagogical skills and subject matter knowledge. It was also reported that ICT knowledge was not part of teacher trainer recruitment, and PTTCs often faced a lack of qualified teacher trainers for subjects like Art, English, Agriculture, and Handicrafts (see Prigent, 2016; Tandon & Fukao, 2015). As regards ICT skills, a study by Dy et al. (2019) showed that "only three out of 10 teacher trainers knew ICT and applied it in classroom, while the rest opted to use paper and blackboards" (p. 76). It bears noting that in recent years, an important project, namely the Strengthening Teacher Education Programmes in Cambodia (STEPCam), has been implemented. One of its key components focuses on upgrading PTTC teacher trainers' qualifications. It was reported that 67 PTTC teacher trainers had been successfully upgraded through the Bachelor of

Education program, and many other teacher trainers had received training on learner-driven and ICT-based pedagogy (UNESCO, 2023a).

Lastly, the findings also suggest that some management team members may lack the capacity to lead the teacher training institution in an effective manner. However, this issue was raised by only one of the teacher trainers interviewed. Not much is known about the capacity and qualifications of management team members at TTCs. Many years ago, Prigent (2016) noted that due to the “highly politicized and opaque appointment process in Cambodia’s education system,” many public school directors often do not possess the necessary knowledge and skills to effectively manage the school (p. 2). Dy (2017) and Kheang et al. (2018) also observed that the appointment of school leadership roles in Cambodia draws upon the teacher workforce based primarily on successful teaching records and seniority, with little regard for prior leadership or administrative experience. Specifically, Dy et al.’s (2019) study involving four PTTCs found that one of the major challenges PTTCs in Cambodia faced was the low capacity of the management team to operate the institutions. Attributed to that was the lack of a strategic plan and direction from MoEYS (Dy et al., 2019). In 2014, MoEYS introduced the ‘Competency Standards for Directors of Teacher Training Centers.’ However, the extent to which these competency standards are used to recruit and train TTC directors is not known or available.

Other issues

The findings expounded in section 7.1.1 above highlight two other issues that are considered to have constrained the effectiveness of pre-service teacher education.

The issues encompass the limited motivation and commitment among the teacher trainers and the prevalent use of traditional teaching approaches (e.g., lecture-based or teacher-centered) among some teacher trainers.

The prevailing issue raised by almost all teacher trainers concerns the lack of motivation and commitment among themselves, which is ascribed to low salaries and workloads. These findings appear to show some consistency with Prigent's (2016) study. Prigent (2016) found that PTTCs were significantly crippled by the low salaries teacher trainers received – a major cause of prevalent vacancies, high turnover, and low levels of commitment. According to the MoEYS's Department of Personnel, in 2020, PTTC teacher trainers received an average base salary of about USD205, excluding other benefits (MoEYS, 2019c). Regardless of other monetary benefits, this base salary was just slightly above the minimum wage (USD190) of unskilled workers/employees in the textile, garment, and footwear industries in the same year (International Labour Organization [ILO], 2020). In relation to this, Prigent (2016) reported that most PTTC teacher trainers chose the job as a default option and would move on as soon as they could find a better job with a better salary. As the present study found, due to low salaries, some teacher trainers engaged in moonlighting activities, such as teaching at private schools, to supplement their meager salaries. In addition, the need to teach a credit-based curriculum that requires more planning, coupled with their moonlighting activities, undoubtedly constitutes a workload that can have an effect on their motivation and commitment. In a more general sense, teacher motivation plays a critical role in the success of any education program. Research has established that teacher motivation results in higher job satisfaction, enhanced teaching practices, and

better student learning outcomes (see Mertler, 2016; Thoonen et al., 2011; Watt & Richardson, 2012).

Another issue identified in the findings pertains to the overuse of lecture-based or teacher-centered approaches among some teacher trainers. Previous studies on pre-service teacher education in Cambodia have criticized the intense application of the teacher-centered approach, whereby teacher trainers write down lessons on the board for pre-service teachers to copy and spend too much time lecturing lessons (Pich, 2017; Prigent, 2016; Tandon & Fukao, 2015). This approach was seen as ineffective and far from interactive. In recent years, as a few teacher trainers interviewed for this study mentioned, more effective pedagogical approaches, particularly IBL, have been promoted and incorporated into the teacher training programs in Cambodia. This shift has also been evident in a number of reports and policies (see Department of Teacher Training, 2016; JICA, n.d.; Mel, 2022; MoEYS, 2019b). However, as the findings of this study suggest, the application of more effective pedagogical approaches in pre-service teacher education in Cambodia, such as IBL and PBL, might not be widely adopted yet. This may have implications for the quality of learning that pre-service teachers receive, as substantial research has found that using advanced teaching approaches, such as IBL and PBL, contributes to increased student engagement and improved learning outcomes (Damsa & Nerland, 2016; Fernandez, 2017; Goldstein, 2016; Ortlieb & Lu, 2011; Preston, Harvie, & Wallace, 2015; Spernes & Afdal, 2021).

7.2.2 In-Service Teacher Education/CPD

Lack of CPD support

The findings presented in section 7.1.2 above indicate a significant deficiency in providing CPD support to in-service teachers, specifically with regard to the limited accessibility of CPD opportunities. Apart from the entrenched monthly TTM, access to other CPD opportunities remains very limited for all in-service teachers interviewed. Many of them attributed this inadequacy to a general lack of support from their schools as well as MoEYS. These findings are in line with those reported in several studies and reports (Kheang et al., 2018; MoEYS, 2015; Phin, 2014; Sot et al., 2022; Tao & Kao, 2023; UNESCO, 2015b). For example, primary school principals in Kheang et al.'s (2018) study reported that some of their teachers received limited CPD opportunities and support beyond their initial training, and some received none following the start of their teaching career. UNESCO's (2015) report also pointed to the limited opportunities for in-service teachers in Cambodia to engage beyond their pre-service training. It is worth noting that during the early 1990s, the government of Cambodia carried out large-scale in-service training programs for in-service teachers appointed after the war who, in most cases, had low qualifications and little pre-service pedagogical training (Kheang et al., 2018; Prigent, 2016). However, when TTCs were reinstated to train prospective teachers, such programs appeared to diminish over time.

Owing to resource constraints at both school and national levels, the capacity of schools and MoEYS-related departments/units to provide CPD support to teachers has been restricted. Consequently, most CPD activities for teachers in Cambodia have been primarily instigated by donors' technical and financial assistance

(Kheang et al., 2018; No & Sok, 2022; Tao & Kao, 2023). These supply-driven or donor-driven CPD activities often fail to address teachers' needs because they tend to serve donors' interests (Tao & Kao, 2023). Furthermore, No and Sok (2022) noted that MoEYS's District Team for Monitoring and Training (DTMT) is designated to take charge of teachers' CPD; however, they are unable to do so due mainly to the lack of capacity and operational budget. In light of these shortcomings, MoEYS, with its key development partners, has recently introduced several crucial CPD-related policy initiatives to revitalize CPD interventions within the education system (see the discussion in Chapter 6, section 6.2.3). Be that as it may, adopting the phased approach may take years to institutionalize CPD across schools nationwide.

On a broader note, CPD activities that are likely to yield a positive outcome need to be sustained over time, accumulatively building teachers' relevant knowledge and skills applicable to their classrooms (Cordingley, 2019; Darling-Hammond et al., 2017; Desimone, 2009; Garet et al., 2001; Guskey & Yoon, 2009; Hunzicker, 2011; Whitehouse, 2011). The role of schools in supporting teachers' CPD has also been considered vital (Brown et al., 2001; Darling-Hammond et al., 2017). Their approaches to teachers' CPD can influence teachers' beliefs and attitudes toward their CPD (Day & Gu, 2010; Tantawy, 2020). Therefore, the limited access to CPD opportunities and inadequate support from schools and MoEYS may have implications on the quality of in-service teachers it aspires to attain.

Ineffective approaches

The findings presented within the confines of section 7.1.2 suggest that three

commonly used approaches for teachers' CPD in Cambodia are considered ineffective. They include the ad hoc approach, one-off workshop/training course, and the cascade model of delivery. The findings also highlight that while CPD opportunities for teachers are already limited, the approaches employed do not signify a sustained effort to support teachers' professional growth. Despite the increased attention given to teachers' CPD in recent years, the present study's findings align with those of earlier research and reports. In particular, previous studies and reports have highlighted that in Cambodia, CPD activities for teachers are driven by an ad hoc approach in the format of a one-off workshop/training course, meaning that they are offered only when there is a specific need or purpose (Kheang et al., 2018; King, 2018; King, 2022; No & Sok, 2022; Prigent, 2016 Tao & Kao, 2023; UNESCO, 2015b). For instance, Kheang et al.'s (2018) research demonstrated that CPD for primary school teachers in Cambodia only occurred when there were changes in the educational landscape, such as modifications to textbooks or the adoption of new teaching techniques. Similarly, UNESCO (2015b) attributed the occurrence of CPD for Cambodian teachers to the same reason, namely, changes in the curriculum. Such approaches often fail to meet teachers' actual needs, place teachers in a passive role, and do not foster significant changes in classrooms (Garet et al., 2001; Kelly & Williamson, 2002; Kennedy, 2014; No & Sok, 2022). Often incorporated within the other two approaches is the cascade model of delivery, whereby a group of individuals, such as school directors, deputy school directors, and teacher technical team leaders, is invited to an ad hoc workshop/training course facilitated by experts or national trainers. Following that, they are entrusted with the responsibility of disseminating the knowledge and skills they have acquired to their colleagues within their

respective schools (Bo et al., 2019; Kheang et al., 2018; King, 2018; King, 2022; Prigent, 2016). Although Cambodia was not where the cascade model had its origins, this linear model has been widely used by MoEYS and its development partners and, according to King (2018), “appears to sit comfortably within Cambodia’s traditional hierarchical culture” (p. 5). However, this cascade model is often seen as inadequate (Bett, 2016; Chigonga & Mutodi, 2019; Hayes, 2000). As Hayes (2000) cautioned, “the cascade is more often reduced to a trickle by the time it reaches the classroom teacher, on whom the success of curricular change depends” (p. 135).

The adoption of the approaches mentioned above is not unique to Cambodia. The application of these approaches is found to be favorable in similar contexts where there are constraints related to financial resources, training infrastructure, and skilled trainers (see Bett, 2016; Chigonga & Mutodi, 2019). In light of that, these approaches can be cost-effective and relatively accessible to a vast number of teachers in a short time despite being questioned about their effectiveness.

Irrelevance to teachers

The findings of this study suggest that there is an irrelevance of CPD activities to teachers’ needs, which many in-service teachers interviewed attributed to the adoption of the ad hoc approach. The findings also accentuate that some CPD contents, for example, healthy eyes, dental health, and personal hygiene, are not considered effective, as they show little usefulness in enhancing classroom instructions. As previously expounded upon, these findings are unsurprising given the ad hoc nature of teachers’ CPD, which is indicative of a supply-driven

approach that prioritizes the provision of CPD without sufficient consideration of the specific needs and requirements of individual teachers. Such CPD, as some previous research has shown, often serves the interests of the donors or MoEYS when educational changes are made, requiring awareness of teachers (Kheang et al., 2018; No & Sok, 2022; Tao & Kao, 2023). Obvious evidence of the irrelevance of CPD content to teachers' needs is found in King's (2018) study. King (2018) disclosed that DTMT at the provincial level determined learning content for teachers' CPD and then passed it on to DTMT at the district level who was in charge of training teachers.

Much existing literature on the challenges of CPD for teachers often highlights teachers' difficulties in accessing relevant CPD opportunities that address their needs in various contexts and across different disciplines (Al Ofi, 2022; Dau, 2020; Hayes, 2019; Lander et al., 2022). Pertaining to that, conceptions of effective CPD programs always stress the importance of meeting teachers' needs and providing the knowledge and skills that help them sort out their classroom issues as well as enhance their teaching practices. This emphasis is reflected in the works of several scholars, including Darling-Hammond et al. (2017), Guskey (2003a), Hopkins and Harris (2000), Hunzicker (2011), Muijs et al. (2004), and Whitehouse (2011).

Teachers' reluctance to CPD engagement

The findings presented in section 7.1.2 above highlight several factors contributing to teachers' reluctance to engage in CPD activities. These factors, which include inconvenient time, effect on income, perceived burden, lack of interest in CPD,

and inconvenient location, are seen as hindrances to effective CPD.

As regards the interrelated factors of 'inconvenient time' and 'effect on income,' what was highlighted by in-service teachers interviewed for this study is consistent with previous research in Cambodia. To supplement their low salaries, many teachers need to engage in other income-generating activities (Hang, 2018; MoEYS, 2015; Tandon & Fukao, 2015). Typical activities may include teaching a second shift, taking remedial classes, offering private tutoring, teaching at private schools, or running small home-based businesses (Bo et al., 2019; Tandon & Fukao, 2015). Given this circumstance, it is very likely that they will not be able to squeeze in any CPD activities that potentially interfere with their typical schedules for other income-earning endeavors. As some in-service teachers employed in this study emphasized, while they demonstrate their enthusiasm about acquiring new knowledge, their involvement in CPD activities is contingent upon the appropriateness of time. To facilitate the gathering of teachers, past CPD activities in Cambodia offered per diem payments to teachers as a means to compensate for their time and effort. However, it had become what Prigent (2016, p. 47) called a "sine qua non" when per diem was viewed as an end purpose in any CPD activity, affecting its effectiveness. In the literature, time constraints have also been well-documented as a critical factor impeding teachers' engagement in CPD due to their workloads and other competing commitments (Borko, 2004; Cordingley, 2008; Day, Sammons, & Stobart, 2007; Geldenhuys & Oosthuizen, 2015; Opfer & Pedder, 2011; Wan & Lam, 2010). Some studies have also highlighted the issue of teachers' low salaries as a constraint to CPD engagement (e.g., Ingersoll, 2001; Darling-Hammond, 2000). Teachers often have to juggle

multiple jobs to make ends meet, making it hard for them to give priority to CPD activities that may affect their income.

Perceived burden and lack of interest were also identified as interrelated factors ascribed to teachers' reluctance to engage in CPD activities, especially among senior teachers. A few previous studies in Cambodia, such as No and Sok (2022), Prigent (2016), and Sol (2020), also highlighted issues of teachers' perceived burden and lack of interest in CPD. For instance, Prigent (2016) found that some teachers, especially the older ones, were not motivated to adopt new teaching approaches that they had learned from their training. They were "resistant to the idea of changing the way that they teach" (p. 51). Furthermore, No and Sok (2022) highlighted the lack of genuine interest in CPD among teachers because their engagement is not linked to attractive benefits packages. These issues have also been identified as barriers to CPD engagement in various contexts (e.g., Desta, Chalchisa, & Lemma, 2013; Ertmer, 2005; Mohamed, 2008; Nurkolis & Yuliejantiningasih, 2020). Teachers who have been in the profession for a long time might perceive new teaching approaches or technologies as an additional burden because they are not inclined to take on anything that challenges them beyond their comfort zone, resulting in a lack of motivation to participate in CPD activities (Desta et al., 2013; Nurkolis & Yuliejantiningasih, 2020). This perception is further exacerbated by the feeling that they have already mastered the necessary skills and knowledge (Ertmer, 2005; Mohamed, 2008). Concerning this matter, research has established that teachers' own attitudes and commitment affect their level of engagement in CPD and are the focal point of transformative efforts (Geldenhuys & Oosthuizen, 2015; Steyn, 2009).

The inconvenient location for CPD activities was also identified as a contributing factor to teachers' reluctance. The in-service teacher who raised this issue emphasized the difficulties associated with traveling if CPD activities are held at a location where extensive travel is required. This finding appears to corroborate a few studies in Cambodia. Sol's (2020) study with Cambodian English as a foreign language (EFL) teachers showed that the difficulty accessing the CPD venue could hinder their participation. Another study in Cambodia by Bo et al. (2019) highlighted that CPD activities that take place outside of teachers' schools or school clusters would not encourage teachers to attend because they are tied up with teaching duties (both at public and private schools) as well as family commitments. It is worth noting that the cluster school system for public primary schools in Cambodia has been a national strategy since 1995, with one of the purposes of promoting locally based capacity building among teachers and school leaders in the face of constrained national resources (Bo et al., 2019; Bredenberg, 2002). In different contexts, some studies have also found that teachers may be less inclined to attend CPD activities if they are held in distant or hard-to-reach locations, as it would require additional time, effort, and sometimes cost (Brown et al., 2001; Ennes et al., 2021; Mtetwa et al., 2019).

Other issues

The findings presented in section 7.1.2 draw attention to three other issues that are regarded as impediments to effective CPD. The issues include the ineffective use of the monthly TTM, lack of resources to implement newly acquired knowledge and skills from CPD experience, and lack of a proper evaluation and

follow-up system for teachers' CPD.

With respect to the ineffective use of the monthly TTM, the findings suggest that the monthly TTM is not optimally leveraged for the professional development purposes of teachers. At times, school directors employ this platform to disseminate news from MoEYS and deliberate on school issues and development plans. In cases where some CPD activities occurred during the monthly TTM, their effectiveness relied on the genuine commitment of the school and teachers. At the primary school level, the monthly TTM is the only regular avenue for teachers' CPD. Schools are obliged to hold the monthly TTM at least seven times in an academic year, and its operating budget is supplied by MoEYS (Bo et al., 2019). The Department of Primary Education determines the guidelines for the monthly TTM, including dates and agendas, which are then disseminated to schools and the relevant units at the beginning of each school year (Bo et al., 2019). In congruence with the findings of the present study, King (2018) found that the monthly TTM was not efficiently used to meet teachers' CPD needs. Passing on information or guidelines from MoEYS and feeding back acquired knowledge from school directors or senior teachers who had attended a recent workshop were commonly reported among participants in King's (2018) study. In spite of that, the positive aspect reported in King's (2018) study was when teachers met with their grade groups, developed lesson plans together, and deliberated on matters pertinent to their specific grades. According to Bo et al. (2019), the purpose of the monthly TTM is to "share ideas on teaching methods and content knowledge, including the best practices and difficulties in their teaching" (p. 41). As such, diverting the focus of the monthly TTM towards other purposes, as previously

mentioned, may lead to a partial squandering of valuable time dedicated to teachers' professional learning.

Another issue highlighted in the findings of this study pertains to the shortage of resources for teachers to implement the new knowledge and skills they acquire from their CPD experience. As presented in the findings, an in-service teacher who had learned about Scratch, a visual application allowing children to create digital stories, games, and animations, could not employ it to support mathematics classes due to constraints posed by limited learning resources within the school. This prompts an inquiry into the practicality of new learning gained from CPD experience, which requires thoughtful consideration. The lack of learning and instructional resources has been a persistent issue in Cambodian schools, particularly those situated in outlying areas (Heng & Sol, 2022; Kheang et al., 2018; Ravet & Mtika, 2021). Despite continuous improvements due to increased financial support from both the government and its development partners, this issue has been a long-standing constraint on the education system in Cambodia since its restoration after the civil war. Concerning the matter discussed, studies in other contexts have also identified the lack of resources for implementing new learning from CPD experiences as a concern for the successful implementation of CPD initiatives (e.g., Adu & Okeke, 2014; Qablan, 2019; Rivera, Manning, & Krupp, 2013).

The last issue identified in the findings concerns the lack of a proper evaluation and follow-up system for teachers' CPD. The in-service teacher who raised this issue emphasized the lack of a system to identify teachers' needs and track their

classroom implementation of new knowledge and skills acquired from their CPD experience. These findings, to some extent, align with previous research in Cambodia. For example, Bo et al. (2019) found that for typical public primary schools in Cambodia, systematic monitoring/follow-up of what teachers learned from the monthly TTM and their classroom implementation was nonexistent. In general practice, teachers keep reporting their achievements or issues of applying new practices from one TTM to the next without a well-established system (Bo et al., 2019). Moreover, No & Sok (2022) highlighted that CPD for teachers often failed to address teachers' capacity gaps due to the absence of a structured process to do that. Likewise, King's (2022) study participants reported that school directors did some monitoring, but their role was more of an inspector rather than "building and developing existing skills" of teachers. However, as discussed in Chapter 6, section 6.2.3, the evaluation and follow-up system can be more comprehensive. It may include (1) conducting a needs assessment prior to CPD activities, (2) evaluating the effectiveness of CPD provision, (3) monitoring the application of new knowledge and skills acquired from CPD experiences, (4) collecting feedback on classroom practices, and (5) offering more CPD support informed by gathered information. In the literature, establishing a well-defined evaluation and follow-up system for teachers' CPD has been much discussed (see, for example, Craft, 2000; Darling-Hammond et al., 2017; Guskey, 2000). The lack of such a system can result in less effective CPD experiences, whereby teachers may not receive the necessary support, their implementation of new practices may not be adequately monitored, and administrators of CPD programs may lack comprehensive and dependable data to enhance the future provision of CPD activities.

Summary

This chapter has presented and discussed key findings appertaining to the third research question, which focuses on two parts, specifically (1) challenges hindering the effective provision of pre-service teacher education and (2) challenges hindering the effective provision of in-service teacher education/CPD. The chapter has illuminated that pre-service teacher education and in-service teacher education/CPD face numerous challenges, potentially affecting their effectiveness. For pre-service teacher education, the challenges revolve around (1) curriculum and implementation, (2) teaching and learning resources, (3) quality and capacity of the stakeholders, and (4) other issues related to teacher trainers' motivation and commitment and teaching approaches. Although some improvements have been acknowledged in certain areas, such as equipment and resources for science-related subjects, pre-service teachers' caliber, teacher trainers' qualifications, and teaching approaches, they persist to a certain extent. As regards in-service teacher education/CPD, the challenges involve (1) the lack of CPD opportunities and support, (2) ineffective CPD approaches, (3) irrelevance to teachers in terms of their needs and CPD content, (4) teachers' own reluctance to CPD engagement due to various factors, and (5) other issues such as ineffective utilization of the monthly TTM, lack of resources for CPD implementation, and lack of evaluation and follow-up system. Most of the findings in this chapter substantiate those of previous research within the last eight years, suggesting little improvements despite the fact that a number of related policies, frameworks, action plans, and programs have been put in place in recent years.

CHAPTER 8: Conclusions and Recommendations

This chapter begins by briefly restating the overall purpose and research questions of the study before providing a summary of the major findings. It then presents the contributions of the study, both theoretical and practical. Following that, the chapter offers research-based recommendations to further enhance both pre-service primary school teacher education and in-service primary school teacher education/CPD in Cambodia. After that, the chapter discusses the study's limitations and concludes with suggestions for future research.

8.1 Purpose of the Study and Research Questions

The study reported in this doctoral dissertation aimed to contribute to a fresh understanding of contemporary primary school teacher education in Cambodia (both pre-service teacher education and in-service teacher education/CPD) after several key policies, frameworks, action plans, and programs have been put in place in recent years. This domain has been relatively underdeveloped and underrepresented in the international literature. It also aimed to particularly support the development of primary school teacher education in Cambodia by offering research-based data and recommendations. In addition, the study sought to extract theoretical insights that could be valuable to the broader context. To this end, the study endeavored to bring answers to the following research questions:

1. How is pre-service teacher education in Cambodia perceived in terms of building the knowledge base of pre-service primary school teachers for teaching?
2. What are Cambodian primary school teachers' perspectives on effective continuous professional development, considering their professional context of constrained resources and support?
3. What challenges can hinder the effective provision of teacher education in Cambodia in terms of producing qualified primary school teachers with a solid knowledge base for teaching and enhancing in-service primary school teachers' quality through in-service training/continuous professional development?

8.2 Major Findings of the Study

8.2.1 Perceptions Toward the Building of Knowledge Base for Teaching

Major findings regarding the perceptions of participants toward the building of pre-service primary school teachers' knowledge base for teaching at the primary school level were categorized into four main themes/knowledge domains, specifically (1) content knowledge, (2) general pedagogical knowledge, (3) pedagogical content knowledge, and (4) knowledge of context. Each of these main themes/knowledge domains encompasses multiple related sub-themes.

As for content knowledge, a large majority of participants affirmed that the 12+2 teacher training program placed little focus on developing pre-service teachers' content knowledge despite some elements of the curriculum emphasizing content

knowledge acquisition. Attributed to the lack of focus was the perception that pre-service teachers already had basic content knowledge needed for understanding and teaching at the primary school level prior to their enrollment in the program. This perception implies a misconception that possessing strong content knowledge is not considered necessary for primary school teaching. Therefore, the level of content knowledge is primarily dependent on pre-service teachers' own existing knowledge acquired from their 12 years of general education. It was also found that while most participants perceived this lack of focus on content knowledge development, a small number of them felt that some core subjects, such as the Khmer language, mathematics, and science, seemed to receive greater attention than the others.

As regards general pedagogical knowledge, there was a consensus among all participants that the 12+2 teacher training program supported pre-service teachers in acquiring knowledge about general teaching strategies necessary for teaching at the primary school level. Most participants also held positive perceptions of the program's effectiveness in facilitating pre-service teachers' comprehension of fundamental principles in classroom management, child development, and psychology. Moreover, more than half of the participants mentioned that the training program facilitated the acquisition of knowledge about producing teaching aids/materials and lesson planning among pre-service teachers.

Concerning PCK, the study found that most participants expressed a positive perception of the 12+2 teacher training program in cultivating pre-service teachers' knowledge related to subject-specific teaching strategies, techniques, and steps to

teach at the primary school level. The training program featured a methodology component for each principal subject, encompassing various teaching strategies and techniques for different types of lessons. In addition, the program offered opportunities for pre-service teachers to comprehend primary school curriculum materials through practical activities, such as teaching demonstrations, classroom observations, and practicums. However, it was acknowledged that such exposures were somewhat constrained. Furthermore, a few participants indicated that the program facilitated pre-service teachers' understanding of the purpose of teaching specific subjects at the primary school level, which is a vital component of PCK.

For knowledge of context, the study revealed that pre-service teachers' knowledge of context was cultivated through multiple subjects and activities included in the 12+2 teacher training program, with no specific subject or activity devoted exclusively to developing this knowledge. Moreover, this study considered knowledge of available technological tools and their possible applications in classroom settings as a form of contextual knowledge. However, many participants reported that pre-service teachers were only trained on basic computer skills and knowledge necessary for fulfilling administrative tasks. Apart from that, a few participants contended that pre-service teachers were made aware of and encouraged to be adaptive to the teaching contexts where they would be stationed.

8.2.2 Effective CPD from In-Service Primary School Teachers' Perspectives

This study found that three overarching themes were deemed, by an overwhelming number of in-service teachers, crucial for CPD to be effective,

namely (1) approaches to CPD, (2) relevance to teachers, and (3) assessment and support. Each of these broad themes consists of several corresponding sub-themes, which constitute the characteristics of effective CPD.

The first main theme, 'approaches to CPD,' comprises four distinct sub-themes. The first sub-theme centers on collective and collaborative CPD, which involves various collaborative efforts such as peer observation, teaching demonstrations, sharing of best practices, group meetings/discussions, and mentoring, among others. The second sub-theme concerns enabling conditions for professional learning if a more conventional form of CPD is preferred (e.g., a workshop or training course). These enabling conditions include access to quality trainers/presenters, appropriate timing and location for learning activities, and expert support. The third sub-theme pertains to sustained and coherent CPD, which emphasizes the need for regular and consistent professional learning activities to facilitate the cumulative acquisition of knowledge and skills over time. The fourth sub-theme is school-based CPD, which highlights the importance of conducting professional learning activities within the school premises to foster an inclusive, supportive, collective, and collaborative learning environment.

The second main theme, 'relevance to teachers,' encompasses two sub-themes. The first one is the content focus, which entails providing the necessary knowledge and skills to facilitate positive classroom changes. The in-service teachers who were interviewed expressed their desire for CPD activities to focus on areas such as primary-level teaching strategies/methods, classroom management, selection and production of teaching materials, digital literacy and

pedagogy, and educational games. The second sub-theme concerns meeting teachers' classroom needs, supporting them in tackling their classroom issues, and improving their teaching practices. To achieve this, the in-service teachers who participated in the study emphasized the need to assess and identify their classroom needs before any CPD provision.

The third main theme, 'assessment and support,' comprises three related sub-themes. The first sub-theme emphasizes the need for a well-defined evaluation and follow-up system that includes conducting a needs assessment, evaluating the effectiveness of CPD activities, monitoring classroom implementation, and gathering feedback on classroom practices to support teachers with future CPD activities. The second sub-theme accentuates the linkages of various benefits with teachers' CPD engagement. The in-service teachers involved in the study suggested that financial and non-financial incentives be linked to CPD engagement to encourage their active participation and acknowledge their commitment. The third sub-theme pertains to the support provided by the school and MoEYS. The in-service teachers interviewed suggested that both the school and MoEYS share the responsibility of providing the necessary support and favorable conditions to establish CPD as an institutionalized practice and ensure that teachers continue their professional growth.

8.2.3 Challenges Hindering the Effective Provision of Teacher Education

The present study revealed a number of challenges that were viewed as crucial impediments to the effective provision of primary school teacher education in Cambodia, including pre-service teacher education and in-service teacher

education/CPD.

Pre-service teacher education

Four overarching themes accompanied by their related sub-themes were identified as key challenges hindering effective pre-service teacher education in Cambodia, consisting of (1) issues with curriculum and implementation, (2) constraints related to teaching and learning resources/materials, (3) stakeholder's limited quality and capacity, and (4) other issues.

With regard to issues with curriculum and implementation, the study identified four issues, including curriculum overload, insufficient training on the curriculum, limited opportunities for classroom observations and teaching practices, and inadequate monitoring of curriculum implementation. Many teacher trainers expressed that the curriculum was too comprehensive, and they could not delve deeply into everything in the curriculum. Besides, the new training curriculum was introduced without adequate training for teacher trainers, making it challenging for them to meet the expected standards. Furthermore, there was a lack of opportunities for pre-service teachers to observe real-world classrooms and practice teaching. Although the training curriculum provided some opportunities for pre-service teachers to observe real-world classrooms, conduct teaching demonstrations in their classes, and practice teaching at partner public primary schools, some teacher trainers asserted that such opportunities were inadequate. In addition, due to insufficient monitoring of the curriculum implementation, a few teacher trainers observed that teacher trainers had too much freedom to decide on the curriculum implementation, which resulted in some of them not fully adhering to the

curriculum.

The study also identified three constraints related to teaching and learning resources/materials: the lack of basic resources/materials to support the teaching and learning process, sustainability issues, and the malfunctioning process for acquiring teaching and learning resources/materials. The lack of reading resources, outdated textbooks, and the shortage of typical substances and materials required to operate with experimental equipment were some common challenges reported among the teacher trainers. Moreover, there were concerns about sustainability. Due to the lack of teaching and learning resources, some teacher trainers had to use their personal finances to buy affordable resources, while others asked the pre-service teachers to share the cost or make them whenever feasible. The reliance on external support from development agencies without commensurate government support also raised concerns over long-term sustainability. Apart from that, a few teacher trainers reported that the process for acquiring resources/materials to support teaching and learning activities was malfunctioning, with requests for necessary items often remaining unfulfilled or not handled promptly despite a budget request process being in place.

The study also revealed concerns regarding the limited quality and capacity of front-line stakeholders, including pre-service teachers, teacher trainers, and leadership team members. While teacher trainers acknowledged some improvements in the caliber of pre-service teachers, they also noted that many admitted pre-service teachers did not have a track record of high academic performance from high school. The low perception of the teaching profession,

mainly because of less attractive compensation packages, was identified as a contributing factor to this issue. The quality and capacity of teacher trainers themselves were also questioned, with some lacking up-to-date knowledge and skills, particularly in ICT, English language proficiency, and new teaching approaches. Furthermore, some management team members were observed to have limited leadership and administrative capacity in leading the teacher training institution efficiently, suggesting the need to obtain additional training and higher qualifications.

Two other issues, specifically limited motivation and commitment among teacher trainers and ineffective teaching approaches, were also identified as potential impediments to the effective provision of pre-service teacher education. Most teacher trainers lacked, to some extent, motivation and commitment to their profession due to heavy workloads and low salaries, and some even resorted to working at private schools during some free time from their primary responsibilities. Moreover, despite the emphasis on innovative teaching approaches like IBL and PBL in recent years, it was observed that some teacher trainers still prevalently employ lecture-based approaches in their instructions.

In-service teacher education/CPD

The study uncovered a number of potential challenges that were regarded as impediments to the effective provision of in-service teacher education/CPD. The challenges were categorized into five overarching themes along with their related sub-themes: (1) lack of CPD support, (2) ineffective approaches, (3) irrelevance to teachers, (4) teachers' reluctance to CPD engagement, and (5) other issues.

As for the lack of CPD support, the study found that in-service teachers in Cambodia encountered considerable challenges in accessing sufficient CPD support. All in-service teachers interviewed for the study reported that, aside from the entrenched monthly TTM, access to other in-service training/CPD opportunities was notably restricted, with almost no training available to them in some cases. Many teachers attributed the severe shortage of CPD opportunities to the overall lack of CPD support from their schools and MoEYS, which failed to foster a conducive environment for professional learning within their schools.

As regards ineffective approaches, the study identified three approaches to teachers' CPD that were regarded as ineffective by many in-service teachers. First, available CPD opportunities were found to be ad hoc, whereby they were only offered when particular learning needs emerged. Second, CPD opportunities were often provided on a one-off basis, failing to support sustained professional growth and facilitate positive classroom changes. Third, the cascade model of delivery was frequently adopted, which involves a small group of teacher technical team leaders and/or school directors/deputy school directors receiving the training and then passing it on to their colleagues. However, it was reported that those who did not receive the training directly barely benefited from this delivery model.

Regarding the issue of irrelevance to teachers, the study revealed that the limited CPD opportunities in-service teachers received often failed to meet their needs. This was due to the prevalent adoption of the ad hoc approach, whereby CPD opportunities were offered according to the preferences of MoEYS rather than

being tailored to teachers' specific CPD needs. In addition, a few in-service teachers claimed that some CPD topics were not helpful as they did not lead to improving classroom instructions.

The study also revealed a number of interrelated factors that contributed to teachers' reluctance to engage in CPD activities, comprising conflicting/inconvenient time, effect on their income, perceived burden, lack of interest, and inconvenient location. Many in-service teachers had packed schedules because they needed to do multiple jobs to supplement their low salaries. Therefore, squeezing in any CPD activity that interfered with their schedules was challenging and could also affect their time for earning extra income. It was also noticed that senior in-service teachers preferred not to venture outside their comfort zone and were disinclined to participate in CPD activities due to the perceived burden and lack of interest. The location or venue for CPD activities was also associated with teachers' reluctance, notably when traveling a considerable distance was necessary.

Three other issues, consisting of ineffective use of the monthly TTM, lack of resources to implement new learning from CPD experiences, and lack of evaluation and follow-up system, were also believed to limit the effectiveness of CPD. Some in-service teachers expressed concerns about the ineffective use of the monthly TTM – the only regular platform for teachers to enhance their knowledge and skills and exchange best practices with their colleagues. School directors sometimes used this avenue to disseminate news from MoEYS or discuss general issues and plans for school development, resulting in no

meaningful professional learning for teachers. The scarcity of resources to implement new learning from teachers' CPD experiences was also highlighted, leading to their new knowledge and skills not being practical for their classrooms. Additionally, there was a lack of an evaluation and follow-up system to assess teachers' needs and monitor the implementation of their CPD learning.

8.3 Contributions of the Study

Drawing on the findings and discussion presented in this doctoral dissertation, the present study offers some theoretical and practical contributions to both pre-service primary school teacher education and CPD for in-service primary school teachers.

8.3.1 Theoretical Contributions

Misconception management

The study presented in this doctoral dissertation offers an original contribution by proposing a model to manage the identified misconception about content knowledge needed for primary school teaching – a phenomenon that further extends the list of factors contributing to the lack of focus on content knowledge development. While there is a well-established consensus among scholars and researchers that content knowledge is a vital knowledge domain contributing to teaching efficacy and effectiveness (Ball et al., 2008; Grossman, 1990; Shulman, 1987; Tatto, 2008), this study has shown that there exists a misconception about content knowledge needed for teaching at the primary school level. In particular,

the perpetuated belief that teaching a relatively broad range of subjects at a more basic level in primary schools may not require strong content knowledge has emerged as a pervasive misconception amongst many participants in the study. As the findings of this study suggest, such a misconception contributes to undermining the cultivation of content knowledge within pre-service teacher education in Cambodia. This misconception also undermines the influential concept of PCK advanced by Lee Shulman in 1986, emphasizing the unique blend of content knowledge and pedagogical knowledge – the province of teachers.

The lack of focus on content knowledge development within pre-service primary school teacher education is not a new phenomenon (Brunetti et al., 2020; Buabeng, Ntow, & Otami, 2020; Greenberg, McKee, & Walsh, 2013; Kosnik & Beck, 2009; Tandon & Fukao, 2015). Previous research has identified various causes attributed to the lack of sufficient focus on content knowledge development, some of which include an overemphasis on teaching methods and pedagogical skills (Aypay, 2009; Rollnick & Mavhunga, 2016), overloaded training curriculum (Le, 2018; OECD, 2020; Prigent, 2016), and short training duration (UNESCO, 2023b). For this study, the prevailing misconception about content knowledge needed for teaching at the primary school level, which consequently results in an inadequate emphasis on content knowledge development within pre-service primary school teacher education, offers an extension to the list of contributing factors found in the existing literature. While it seems plausible to assume that teaching basic content or material in primary schools does not require a deep understanding of the subject matter, it only stems from a misunderstanding or societal underestimation of the cognitive demands and complexity of

foundational education at the primary school level. This can particularly be the case in Cambodia, where the perception of teaching as a profession is still low (Williams et al., 2016). In fact, primary school education is crucial as it lays the groundwork for all future learning (UNICEF, 2023). Teachers with strong content knowledge alongside other knowledge domains can ensure a solid educational foundation for students, setting them up for success in their future education.

The perpetuation of the misconception within pre-service teacher education also underscores the need to manage it within CPD programs for in-service primary school teachers. As the study's findings indicate, there are concerns over the irrelevance and ineffectiveness of CPD content, which often does not support teachers in improving their classroom practices through enhanced content knowledge and instructional skills. It is crucial to address this misconception to prevent its perpetuation and emphasize the significance of content knowledge development in CPD programs for in-service primary school teachers, which was overlooked to some extent during their pre-service education.

Therefore, the study presented in this dissertation proposes a model to manage this misconception within both pre-service primary school teacher education and CPD programs for in-service primary school teachers (see Figure 8.1). Drawing from a synthesis of some well-accepted principles of cognitive psychology⁷ and pedagogy⁸, this model comprises five stages. Depending on the review and assessment outcomes in Stage 5, the cycle can be revisited as necessary.

⁷ i.e., Metacognition (Flavell, 1979), cognitive conflict (Piaget, 1985), and scaffolded learning (Vygotsky, 1978)

⁸ i.e., Formative assessment (Black & Wiliam, 1998) and conceptual change instruction (Posner, 1982)

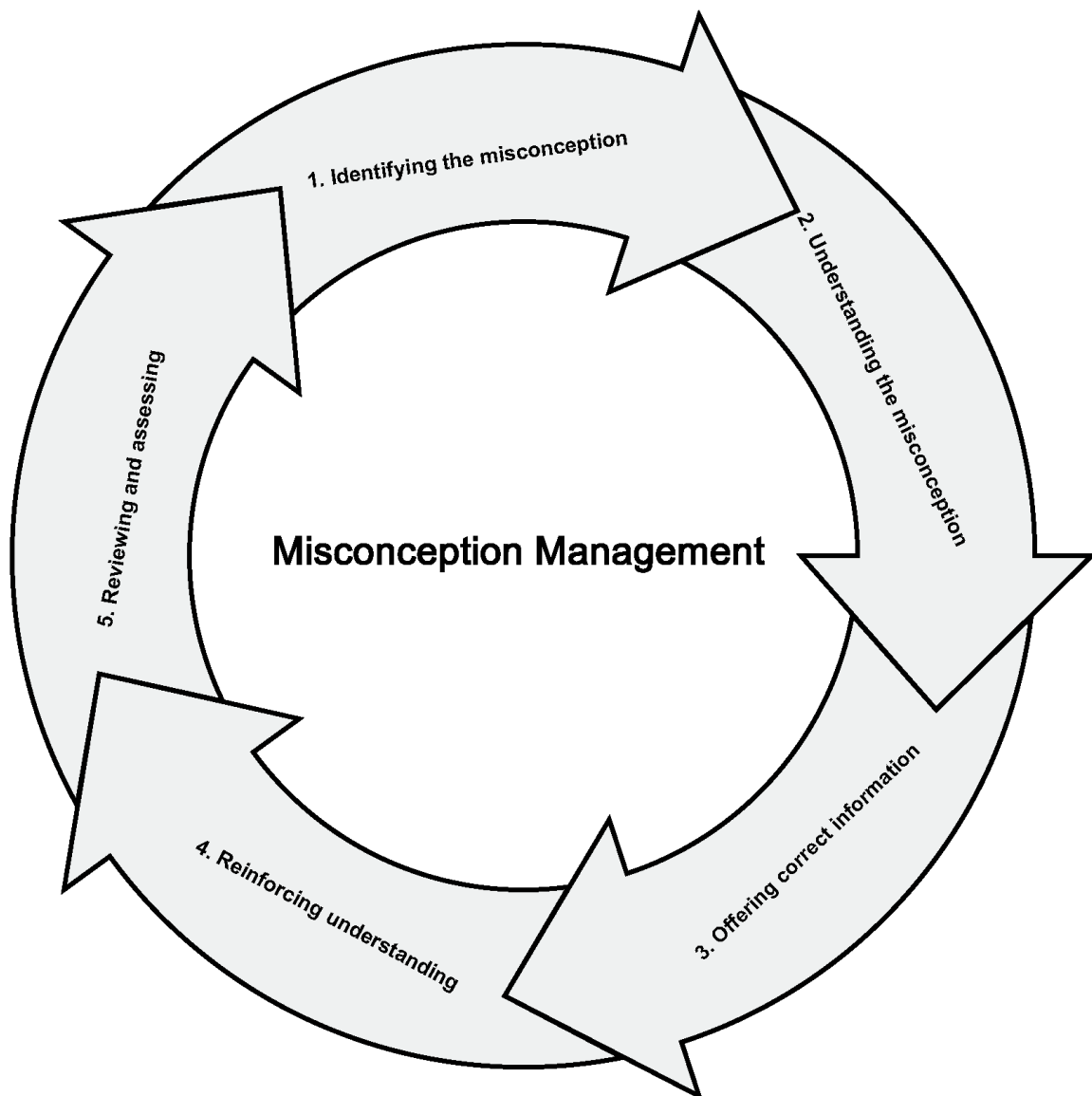


Figure 8.1 Misconception Management Model of Content Knowledge for Primary School Teaching

Stage 1: As a starting point, it is vital to identify the misconception. It can be done through a variety of methods, such as surveys, interviews, group discussions, or diagnostic tests.

Stage 2: After the misconception is identified, it is crucial to understand its root causes – why the individuals believe that strong content knowledge may not be needed for primary school teaching. It could involve aspects like entrenched beliefs about primary school education, societal underestimation of the skills and knowledge needed to be an effective

primary school teacher, low recognition of teaching as a profession, lack of access to new research, etc.

Stage 3: After understanding the root causes of the misconception, it is of vital importance to provide correct information to debunk the misconception in a clear manner. This could involve presenting/collecting evidence from research reports, journal articles, expert testimonials, and other materials that demonstrate the impact of strong content knowledge on the outcomes of primary school education.

Stage 4: It is important to keep employing different methods to reinforce understanding, such as evidence from new research, CPD activities, or hands-on activities.

Stage 5: To ensure that the accurate information has been internalized and that the misconception has been rectified, it is crucial to regularly review and assess the individuals' understanding. Based on the review and assessment outcomes at this stage, the cycle can be repeated as needed.

Overall, it is of utmost importance to rectify the misconception in order to foster an accurate understanding, leading to a robust shift to a more substantial focus on content knowledge development within both pre-service teacher education and CPD programs. If left unchallenged or unaddressed, the perpetuation of the misconception may become further entrenched and normalized, resulting in a cycle of ill-equipped teachers and diminished educational outcomes.

Conceptualization of effective CPD in the context of constrained resources and support

The study presented in this dissertation also offers a handful of theoretical support by putting forward a model for effective CPD for in-service primary school teachers in the context of constrained resources and support, particularly one that is similar to Cambodia. As explicated in Chapter 2, this study engaged various theoretical

perspectives of adult learning theory (andragogy) and situated learning theory to identify the characteristics of effective CPD from the perspective of in-service primary school teachers in Cambodia. Previous research has explicitly recommended the incorporation of adult learning theory into teachers' CPD (Darling-Hammond et al., 2017; Whitehouse, 2011). Some CPD models, such as the community of practice, collaborative CPD, and school-based CPD, have also adopted some key assumptions or principles of situated learning theory (see Cordingley et al., 2003; Desta et al., 2013; Parker & Patton, 2016; Wei et al., 2010; Wenger et al., 2002). However, from a pragmatic or eclectic perspective, the findings of this study suggest that the integration of both adult learning theory and situated learning theory can provide a more comprehensive approach (i.e., complementarity) to developing an effective CPD program for teachers in the context of constrained resources and support. Specifically, most of the characteristics of effective CPD identified in the study align well with the underlying assumptions or principles of the two theories, including (a) collective and collaborative CPD, (b) enabling conditions for learning, (c) sustained and coherent CPD, (d) school-based CPD, (e) content focus, and (f) meeting teachers' classroom needs. This alignment better accounts for the complexity of the professional learning process of teachers as adult learners. Moreover, combining theoretical perspectives from both theories complements each other's limitations and provides a balanced approach. While adult learning theory emphasizes individualism or internal dynamics of the learners (e.g., self-directedness, individual experiences, personal orientation to learning, and internal motivation), it may overlook the significance of social interactions and collaboration and the context in which learning occurs. Situated learning theory complements this

limitation of adult learning theory by bringing to the forefront external factors, such as the environment, social interactions and collaboration, and authentic context, that enhance and shape the professional learning experience of teachers. In situated learning theory, knowledge is not solely an individual construct but is co-constructed through interactions with peers, mentors, and the surrounding environment (Lave & Wenger, 1991). Likewise, while situated learning theory focuses primarily on the contextual and social aspects of learning, it may overshadow individual aspects of the learners, such as their individual experiences, intrinsic motivation, personal learning orientation, and their self-directed nature. By recognizing and catering to these personal dimensions of learning, adult learning theory complements the limitation of situated learning theory, which is rooted in the idea that learning is a social process. Thus, integrating the two theories provides a more comprehensive and balanced framework for designing an effective CPD program for teachers, making their CPD experience more individually meaningful and contextually relevant through interactions and collaboration with others.

As part of the assessment and support system, the study has also sparked deliberation of including an incentivized system that links teachers' CPD engagement to various benefits (both financial and non-financial) as a complement to the conceptions of effective CPD for teachers. While some education systems have already established incentive mechanisms for teachers' CPD involvement (Caena, 2011; MoEYS, 2019a; OECD, 2019; Tannehill et al., 2021), major conceptions of effective CPD for teachers found in the literature often neglect the role of extrinsic motivation in teachers' CPD (see, for example, Cordingley, 2019;

Darling-Hammond et al., 2017; Desimone, 2009; Garet et al., 2001; Guskey, 2003b; Whitehouse, 2011). This neglect is due to concerns that extrinsic rewards may undermine teachers' intrinsic motivation as adult learners (Fullan, 2016; OECD, 2019). However, there is an acknowledgment that CPD for teachers is context-sensitive, suggesting that existing notions of what constitutes effective CPD may not fully account for different contexts (Darling-Hammond et al., 2017; Guskey, 2003b; Whitehous, 2011). The present study suggests that in the context where teachers struggle to make ends meet due to low salaries and the need to engage in moonlighting activities, extrinsic motivation is considered crucial to encourage active participation and recognize their commitment to CPD. In light of this, when teachers' basic needs are not met, their intrinsic motivation for CPD is affected, creating competing priorities between meeting immediate needs and professional development. However, the incentivized system needs to strike a balance between teachers' intrinsic and extrinsic motivation to ensure their sustained engagement in CPD and position extrinsic motivation as complementary to intrinsic motivation.

Drawing from these premises and the notion of misconception management presented earlier, this study introduces a theoretical model (see Figure 8.2). The model offers a comprehensive representation of various elements and theories that jointly contribute to the effectiveness of a CPD program for in-service primary school teachers, particularly in the context where resources and support are limited.

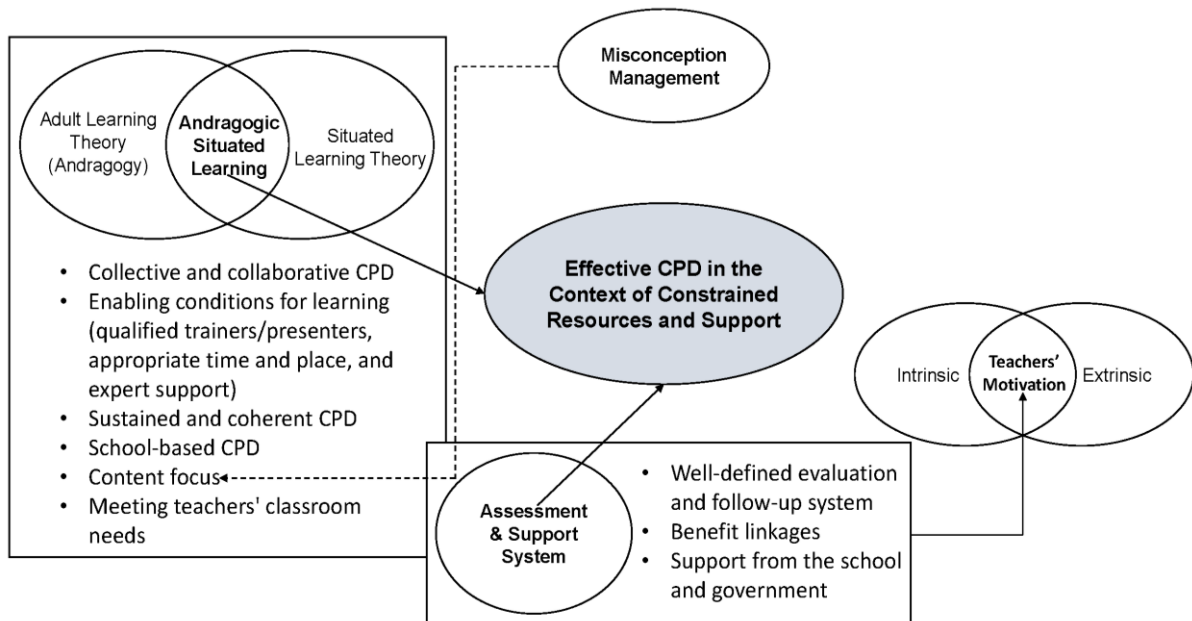


Figure 8.2 Theoretical Model for Effective CPD in the Context of Constrained Resources and Support

Central to this model is the convergence of adult learning theory (andragogy) and situated learning theory. This study, for the first time, conceptualizes this theoretical intersection as ‘Andragogic Situated Learning,’ which includes a list of attributes essential for an effective CPD program. Another key dimension of the model emphasizes the ‘Assessment & Support System,’ which points out the indispensability of a well-defined evaluation and follow-up mechanism and support from the school and government, as well as a benefits system that seeks to balance teachers’ intrinsic and extrinsic motivation in engaging in CPD activities. In addition, the dotted arrow in the model draws attention to the need to manage and address the perpetuated misconception about content knowledge needed for teaching at the primary school level (see the discussion in the preceding section), which is vital for the content-focused aspect of a CPD program.

Overall, the arrows and connections in the model indicate the dynamic interplay

between all the components that influence the effectiveness of a CPD program. While the theoretical components on the left of the model, comprising a list of key characteristics, form the bedrock of an effective CPD program, they are directly tied to a well-defined system that serves to evaluate, follow up on, and support teachers' CPD, as well as to foster their genuine engagement.

8.3.2 Practical Contributions

The study has generated a fresh understanding of contemporary primary school teacher education in Cambodia (both pre-service teacher education and CPD) following a series of reforms in recent years. The study's findings and recommendations provide valuable insights to inform policy and practice, supporting evidence-based decision-making and fostering ongoing refinement in primary school teacher education in Cambodia. In particular, the study has highlighted areas within pre-service primary school teacher education in Cambodia that require greater attention, such as strengthening content knowledge development, intensifying hands-on training for pre-service teachers, and fostering digital teaching competencies alongside generic digital skills. The study has also identified the characteristics of effective CPD from the perspective of in-service primary school teachers in Cambodia, which can serve as a framework for devising a successful CPD program in Cambodia as well as other similar contexts constrained by insufficient resources and support. Furthermore, the study has discussed a number of enduring challenges that continue to constrain primary school teacher education in Cambodia. This information can be utilized to allow for more effective targeting of future resources and intervention strategies to further refine and enhance primary school teacher education in Cambodia.

8.4 Recommendations

Based on the findings and discussion of the present study, especially with regard to the identified challenges, the following recommendations are made to further enhance both pre-service primary school teacher education and CPD for in-service primary school teachers in Cambodia. While the recommendations are primarily directed at the Cambodian context, they might also have implications for other contexts with similar social, educational, and economic characteristics. However, it is important to approach these recommendations cautiously, considering the uniqueness of each context.

8.4.1 Pre-Service Primary School Teacher Education

- **Continue to improve the attractiveness of the teaching profession:**
The experience from high-performing education systems indicates that getting the right individuals to enter the teaching profession is crucial in developing great teachers (Darling-Hammond et al., 2010; Tatto, 2008). Despite the Cambodian government's ongoing efforts to increase teacher salaries, the increments have not been adequate to narrow the pay gap between teaching and other potential professions that require similar qualifications and skills. As a result, teaching is still not considered an ideal profession among highly motivated and academically competent individuals. In order to attract the most promising candidates to the teaching profession, it is essential to provide competitive salaries and benefits, including during pre-service training, effectively implement well-defined

career progression pathways for teachers, promote recognition and respect for the teaching profession, and enhance teachers' working conditions. These measures will significantly enhance the prospects of the teaching profession among the most talented individuals.

- **Place greater emphasis on developing content knowledge of pre-service teachers:** Whilst it is essential to develop pedagogical knowledge of pre-service teachers, priority should also be given to the development of content knowledge. Inadequate content knowledge may undermine its interplay with other knowledge domains and the quality of teachers that the program produces. Moreover, rectifying the misconception that teaching at the primary school level does not require strong content knowledge is also of utmost importance. All concerned stakeholders, particularly pre-service teachers, teacher trainers, and teacher training institutions, must hold the same conviction that even though teaching basic knowledge and skills at the primary school level, possessing strong content knowledge still plays a crucial role in laying the foundation for the future success of students. Addressing this misconception may help alleviate the neglect or inadequate attention paid to the development of pre-service teachers' content knowledge.
- **Align pre-service teacher education with Cambodia's teacher professional standards:** In order to graduate from the program or get certified, pre-service teachers must demonstrate that they fully meet the statements about knowledge, skills, competencies, and attitudes specified in the standards. Therefore, the pre-service teacher education program

needs to embed the relevant professional standards in the curriculum, aligning learning outcomes or objectives with statements in the standards and ensuring that each standard is addressed through specific courses or units of study.

- **Revise or phase out the current 12+2 teacher training program:** As the study suggests, the current 12+2 program, which operates on the credit-based system, is still viewed as having too much breadth and insufficient depth, containing too many lessons that need to be covered in a relatively short duration. Therefore, it is necessary to critically and comprehensively review the current 12+2 program and ensure it contains what matters the most to future teachers if it continues to be used as a major training program. However, it is strongly recommended that the 12+2 program be phased out and replaced exclusively with the 12+4 program. This proposal stems from the view that two-year training may prove inadequate to (1) cultivate in-depth content knowledge across a variety of subjects taught at the primary school level, (2) fully develop teaching skills, and (3) get comprehensive exposure to a wide range of practical experiences.

- **Provide extended and well-supervised clinical experience/practicum:** The current 12+2 teacher training program features a 14-week practicum over the course of two years (six weeks in the first year and eight weeks in the second year). Best international practice suggests a minimum of 30 weeks or 900 hours of well-supervised practicum (Darling-Hammond, 2006). Extensive research has also underscored the significance of a

robust practicum as an essential component of any pre-service teacher education program (Allen, 2003; Darling-Hammond, 2014; Muzaffar et al., 2011). Therefore, it is of vital importance to further extend the practicum period of the current 12+2 program to at least a minimum of 30 weeks or, as suggested by Sot et al. (2022), adopt the teaching residency model. This extended practicum will better allow pre-service teachers to develop their teaching skills through hands-on experience; bridge the gap between theoretical knowledge and practical application; gain real-world experience through opportunities to work with experienced teachers, mentors, and students; build their teaching confidence; and get ready for classroom challenges and expectations.

- **Leverage technology integration into the program and develop digital teaching competencies of pre-service teachers:** In the face of the rapid pace of technological advancements and unprecedented circumstances like the ones brought by the COVID-19 pandemic, digital technologies play an increasingly vital role in modern-day education. Therefore, it is essential to incorporate digital technologies into pre-service teacher education to enhance pre-service teachers' learning experiences and exposure to a wide range of digital tools and resources. Furthermore, it is imperative to provide ample support to pre-service teachers in cultivating digital teaching competencies and preparing them to effectively teach with technologies in 21st-century classrooms.
- **Increase investment in pre-service teacher education:** While financial and technical assistance from development partners and international

organizations continues to play a significant role in the development of pre-service teacher education in Cambodia, the government should also allocate sufficient funding to enhance the infrastructure, facilities, reading resources, and teaching and learning materials of the teacher training institutions. The improved infrastructure, facilities, and resources will ensure the program is able to function effectively.

- **Improve remuneration and professional development opportunities for teacher trainers and the management team:** Teacher trainers/educators and the management team of the teacher training institutions play a pivotal role within the education system because they take responsibility for preparing and shaping the knowledge, skills, competencies, and attitudes of future teachers. Given the magnitude of their role, they should be well compensated with competitive salaries and benefits. This is imperative for two main reasons: (1) to attract and retain highly qualified and talented professionals in the field of teacher training/education and (2) to acknowledge their expertise, as they are basically required to have extensive knowledge and experience as well as advanced degrees. It is equally crucial to provide them with sufficient professional development opportunities to ensure that they remain up-to-date with the latest educational practices and to advance their knowledge and skills for achieving a better quality of teacher training/education.

- **Foster diverse partnerships and collaboration with local and international schools/organizations:** Teacher training institutions should

intensely promote a variety of partnerships and collaboration with both local and international schools/organizations. Diverse partnerships and collaboration can offer a range of advantages, including access to broader expertise, classroom spaces, mentoring opportunities, resources, and other professional development opportunities, all of which would be beneficial to both pre-service teachers and teacher trainers.

- **Regularly monitor and evaluate training effectiveness:** It is fundamentally important to monitor and evaluate the effectiveness of the training program on a regular basis. This is to ensure high-quality teacher preparation and consistency throughout the program, take corrective measures if needed, promote accountability among all concerned stakeholders, and continue to enhance the training program to adapt to constantly evolving changes and expectations in the field.

8.4.2 CPD for In-Service Primary School Teachers

- **Provide tailored and sustained CPD:** In order to optimize CPD for teachers, any CPD activities should be tailored to meet teachers' specific needs, taking into account their professional development needs and classroom needs as well as those of their schools. For this to happen, a regular needs assessment should be conducted, which serves as the foundation for developing and implementing CPD activities. At a minimum, CPD activities should be relevant to teachers, providing them with the knowledge and skills that are most likely applicable to their classrooms, thereby facilitating improved classroom practices and enhancing student

learning outcomes. Moreover, CPD needs to be sustained over time to allow teachers to try new practices, reflect on, and refine them.

- **Prioritize CPD approaches that matter most:** In a context characterized by constrained resources and support, as is the case in Cambodia, it is imperative to focus on CPD approaches that maximize accessibility, cost-effectiveness, and relevance for teachers. Such approaches may include school-based CPD activities such as collaborative planning, coaching and mentoring, peer observations, lesson study, and collaborative research. These school-based approaches encourage teachers to form communities of practice, engage in peer-supporting and collaborative activities, and learn from each other to improve their teaching practices without incurring significant costs and with greater accessibility.
- **Optimize the monthly Thursday Technical Meeting (TTM):** This recommendation aligns with King (2022). For in-service primary school teachers in Cambodia, TTM is the only regular avenue for CPD, which has been well-entrenched as part of the regular school life of the teachers. However, as reported in the present study and other previous studies, this monthly TTM was not optimally leveraged for the professional development purposes of teachers. Therefore, this unique platform must be efficiently utilized as a collaborative school-based approach to maximize teachers' professional learning.
- **Promote self-directed learning:** While CPD opportunities available to in-service primary school teachers in Cambodia are highly constrained,

promoting self-directed learning can be a viable and low-cost approach to teachers' CPD. Therefore, teachers should be encouraged and motivated to set their professional learning goals, reflect on their current practice, and seek ways to improve their teaching. To support their self-directed learning, teachers must be provided access to various learning resources in both digital and print formats, such as online courses, open educational resources, research articles, and books. Establishing learning communities for teachers is also crucial in providing a platform for teachers to exchange ideas, resources, and experiences. All of these can contribute to establishing a supportive environment that fosters self-directed learning among teachers.

- **Reduce the cascading steps:** In cases where the cascade model is deemed necessary to deliver specific CPD content, it is imperative to minimize the cascading steps between the initial training and terminal training. It is also crucial to ensure that the initial training is comprehensive, including both content and effective training techniques, so that the trainers of trainers (ToT) are well-prepared and self-assured in their ability to train others in the subsequent steps.
- **Link all sorts of CPD engagement to a transparent, attractive incentive system:** All sorts of CPD engagement, including structured/formal and self-directed learning activities, should be linked to a transparent, attractive incentive system that recognizes and rewards teachers who actively engage in CPD activities. Such a system can contribute to fostering a positive culture of lifelong learning and encourage more teachers with

competing priorities to devote more of their time and effort to CPD. There is evidence that MoEYS has begun to implement this sort of incentive system following the introduction of some key frameworks and guidelines, such as *CPD Framework for Teachers and School Principals 2019*; *CPD Handbook: A Guide to CPD for Teachers, School Directors, and Education Specialists in Cambodia 2021*; and *System for CPD Credit Acquisition 2021*. However, there is a need to expand its phased approach so that more teachers can benefit from this system while engaging in CPD activities. It is also crucial to ensure that such an incentive system is perceived as supplementary to the internal motivation of teachers rather than the ultimate goal of their CPD engagement.

- **Foster the intrinsic motivation of teachers:** While promoting teachers' extrinsic motivation through a transparent, attractive incentive system is crucial in a context of constrained resources and support, like in Cambodia, fostering teachers' intrinsic motivation to engage in CPD activities is also of vital importance. This intrinsic motivation will contribute to the sustainable professional growth of teachers and lead to their quality engagement. Various approaches can be employed to foster teachers' intrinsic motivation, including (a) tailoring CPD activities to meet the individual needs and interests of teachers, (b) providing teachers with more autonomy to exercise their agency in terms of the selection of CPD topics, methods of delivery, and the timing, (c) developing a professional learning community where teachers can collaborate, share, and learn from each other, (d) providing teachers with quality and easily accessible resources, (e)

recognizing and celebrating teachers who engage in all sorts of CPD activities, and (f) promoting collaboration with external organizations, universities, and experts to bring in new CPD opportunities and perspectives.

- **Allocate dedicated funding for CPD activities at both national and local levels:** Dedicated funding should be allocated to ensure that sufficient resources are available to facilitate the CPD activities of teachers. In particular, the availability of such funding for CPD will provide the requisites for diversifying CPD opportunities, making them accessible to teachers from varying socioeconomic backgrounds and geographic locations. This funding should also be designated for capacity-building activities of school leaders or administrators who play a crucial role in facilitating conducive environments for teachers' CPD.
- **Establish a well-defined evaluation and follow-up system:** While it may not be applicable to all sorts of CPD activities, ideally, this system should include conducting a regular CPD needs assessment, evaluating the effectiveness of CPD provision, monitoring classroom implementation, collecting feedback on classroom practices, and offering more CPD support based on the collected data. Moreover, this system must be well-coordinated by all relevant stakeholders and implemented as a continuous process to foster teacher improvement rather than a concluding measure of any CPD activity.

8.5 Limitations of the Study

It is essential to acknowledge that no research is without its limitations, and being transparent about these limitations allows for a more comprehensive understanding of the findings. Likewise, this study is no exception. It has some limitations that should be considered with caution when interpreting the findings of this study. First, unlike quantitative research, this qualitative case study does not aim for generalization. Its purpose is to provide rich insights into the specific contexts that the study explored, so its findings may not be broadly generalizable, even within Cambodia. Second, due to COVID-19-related restrictions, such as strengthened cross-border controls and school closures during the data collection period, the researcher could not travel to Cambodia and visit selected research sites to carry out field-based research. This circumstance restricted the options for data collection methods initially intended by the researcher to cross-verify the findings obtained through different data collection methods. Consequently, the researcher was unable to conduct classroom observations, hold onsite focus group discussions, and collect a variety of field-based documents for analysis, ending up conducting mainly online interviews and web searching. Third, it is worth acknowledging that research in a small developing country like Cambodia is often constrained by the lack of access to high-quality data (Ford, 2006). Precisely, the researcher's endeavors to collect high-quality data were hampered to some extent by bureaucratic procedures of the relevant institutions, the paucity of public data, and the limited knowledge of some research participants about the areas that this study explored. Furthermore, while this study examined a number of areas and aspects, it is also important to acknowledge a limitation pertaining to the depth of interview responses. Some participants provided relatively broad and

brief answers and, in some instances, lacked the granularity necessary for a comprehensive analysis. Specifically, a number of pre-service teachers struggled to comprehend certain aspects of the interview questions. Even though efforts were made to support them and probe into their experiences and perceptions, their responses were quite brief. This limitation might impact the degree to which the researcher could derive nuanced insights and draw robust conclusions from the data collected.

Despite these limitations, the researcher has endeavored to take countermeasures by practicing reflexivity and adhering to high ethical conduct throughout the study. The researcher has also made concerted efforts to utilize all available resources and networks to obtain the relevant data, which should have been accessible to the public.

8.6 Suggestions for Future Research

As discussed in the preceding section, the present study has some limitations, which could be better addressed by future research. In light of the limitations, future research could explore similar topics to broaden our understanding of primary school teacher education in Cambodia (both pre-service teacher education and CPD) and enhance the generalizability of the findings. Therefore, future research is encouraged to employ a diverse array of data collection methods, such as qualitative interviews, focus groups, field-based observations, and document analysis, in conjunction with quantitative approaches where possible. By incorporating these multifaceted strategies, future research will be better positioned to capture nuanced and detailed insights into the areas of

exploration with increased validity and reliability. It is also vital for future research to extend the scope of the study by including a wider range of relevant stakeholders, such as pre-service teachers, in-service teachers, teacher trainers, leaders of teacher training institutions, policymakers, and development partners. A broader inclusion of teacher training institutions in various geographical locations is also recommended. This will facilitate a more comprehensive and robust analysis of different angles or untapped realities that will enrich the theoretical and practical implications of the research.

Furthermore, while the present study has delved into the perception of how the 12+2 teacher training program builds the knowledge base of pre-service primary school teachers for teaching, future research could examine the 12+4 teacher training program and the challenges that could impede its effectiveness. The 12+4 program has been described as an “expanded and modernised version” of the 12+2 program and is currently being administered by two newly established TECs with the assistance of the Japan International Cooperation Agency (JICA) (No & Sok, 2022, p. 34). It is opportune to scrutinize the effectiveness of the 12+4 program because the first cohort of pre-service primary school teachers who underwent this program had concluded their studies during the preceding school year, i.e., 2021-2022. A comparative study to assess each program’s effectiveness is also recommended.

The study has uncovered the existence of a misconception among many interviewees regarding the extent of content knowledge needed for teaching at the primary school level. As such, it becomes imperative for future research to

establish more robust evidence to debunk the fallacy, thereby fostering a more accurate understanding. This can be achieved by investigating both the direct and indirect influences of teachers' content knowledge on primary school students' academic achievements, engagement, and attitudes toward their learning. Quantitative research could employ longitudinal studies to track primary school students' performance and correlate it with levels of teachers' content knowledge. On the other hand, qualitative research could delve into how teachers' command of content expertise influences their pedagogical strategies, classroom dynamics, and students' interest and curiosity.

Regarding effective CPD for teachers, the study suggests that an incentivized system linking financial and non-financial rewards to teachers' CPD engagement is considered an essential component of effective CPD for teachers in a context characterized by limited resources and support. However, the role of extrinsic incentives in shaping effective CPD for teachers often remains neglected in the conceptions of effective CPD found in the literature. Therefore, this doctoral dissertation advocates for future research to be directed toward understanding how such extrinsic incentives contribute to the long-term effectiveness of CPD for teachers. In order to achieve this, it is suggested that longitudinal studies be undertaken to gain insights into the sustainability of teachers' engagement in CPD programs linked with incentivization, as well as the impact of such engagement on teachers' professional growth and students' learning outcomes.

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Appendices

Appendix A – Interview Protocols (Forms 001-003)

Interview Protocol Form 001 (For In-Service Primary School Teachers)

Date of Interview: _____

Researcher

SOL Koemhong (Mr.)
Ph.D. Student
International Christian University (ICU)
Tokyo, Japan

Interviewee

Name: _____
Sex: _____
Teaching Grade(s): _____
Length of Service: _____ (After initial teacher training)
Workplace: _____
Contact Information: _____
Alphanumeric code: _____

I would like to thank you again for agreeing to participate in this interview. As I have already mentioned to you before, the study seeks to (1) understand the efficiency of pre-service primary school teacher education (12+2 program) in Cambodia, (2) identify what makes effective continuous professional development (CPD) for primary school teachers in Cambodia, and (3) explore challenges that can hinder the effective provision of both pre-service teacher education and in-service teacher education/CPD. In order to achieve the overall research purpose, this study will critically look into three key stakeholders' perspectives, namely in-service teachers, pre-service teachers, and teacher trainers.

This study will provide a fresh understanding of contemporary primary school teacher education in Cambodia (both pre-service teacher education and in-service teacher education/CPD) – a domain that has been relatively underdeveloped and underrepresented in the international literature. Meanwhile, the study will also support further development and planning of primary school teacher education in Cambodia and other comparable contexts by offering research-based data and recommendations to inform relevant stakeholders. The study may also be able to extract any theoretical insights that could be valuable or applicable to the broader context.

This interview will take about an hour, during which I will be asking you some questions with the purpose of addressing my research questions. To facilitate note-taking, this interview will be recorded for the purpose of transcription for analysis.

You have read the participant information sheet and signed the consent form indicating that you have understood all the study's key aspects and your rights as a participant. If you still have questions, please let me know.

Today's interview will focus on three main aspects as follows:

1. Your perceptions of the efficiency of pre-service primary school teacher education/training in Cambodia (12+2 program)
2. Your perspectives on effective continuous professional development, considering your professional context of constrained resources and support
3. Challenges that can hinder the effective provision of in-service teacher education/training/CPD

Before we begin the interview, do you have any questions?

If any questions arise during the interview, please feel free to ask. I will be more than happy to clarify them.

Section 1: Your perceptions of the efficiency of pre-service primary school teacher education/training in Cambodia (12+2 program)

In this section, I would like to examine your perceptions of the efficiency of pre-service primary school teacher education/training (12+2 program) in Cambodia in terms of building the knowledge base of pre-service primary school teachers for teaching.

To what extent does the pre-service teacher education/training (12+2 program) build the following knowledge of pre-service primary school teachers for teaching at the primary school level?

- **Content Knowledge** (for example, Khmer literature, mathematics, sciences, and social studies)

Prompts:

- *Facts, concepts, theories, and principles in the subjects*
- *Interrelation and connection within a subject*
- **General Pedagogical Knowledge** (broad principles and strategies of classroom management and organization, as well as general knowledge of learners and learning, curriculum, aims and purposes of education)
- **Pedagogical Content Knowledge** (knowledge of a specific subject)

- Purposes of teaching a subject
 - Students' understanding, conceptions, and misconceptions of specific topics in a subject
 - Clear understanding of curriculum materials of a particular subject area
 - Instructional strategies and presentations for teaching specific topics in a subject
- **Knowledge of Context** (contextual factors concerning students, schools, community, and government)

Prompts:

- Socio-economic
- Community expectations and culture
- School/government-related guidelines and policies
- Technology

Is there anything you would like to add/talk about?

Section 2: Your perspectives on effective continuous professional development, considering your professional context of constrained resources and support

In this section, I would like to look into your perspectives on effective continuous professional development (also known as in-service teacher education/training) around this broad question, “What makes effective continuous professional development for primary school teachers in Cambodia?”

Regarding the contents (topics) of professional development activities, what should be focused on?

From your perspective, what forms of activities and learning environments make continuous professional development effective?

How should conditions like time, venue, resources, and presenter/trainer be in order to allow for effective continuous professional development?

Do you think coherence and consistency of professional development activities contribute to effective continuous professional development? In what way?

What kind of support from the school and/or government do you think helps enhance the effectiveness of teacher professional development? Why is that support essential?

Is there anything you would like to add/talk about?

Section 3: Challenges that can hinder the effective provision of in-service teacher education/training/CPD

In this section, I would like to explore challenges that can hinder the effective provision of in-service teacher education/training/CPD in terms of enhancing the quality and competence of in-service primary school teachers in Cambodia.

With regard to the relevancy of activities, do they meet your professional needs and/or school needs? In what way?

Prompts:

- Best teaching practices/strategies
- Subject matter knowledge
- ICT
- Curriculum

What about delivery approaches (forms of activity, time, quality of presenters/trainers, supporting resources, and coherence and consistency of activities)? Are they effective? Can you elaborate?

Teachers' own motivation to improve their teaching practices is vital. Do you feel motivated? Can you explain?

What kind of support do you get from the school/government level in terms of your in-service education/training/CPD? Do you think it is enough? Can you elaborate?

Is there anything you would like to add/talk about?

Post Interview:

- Thanks to the interviewee
- Reassure confidentiality
- Ask permission to follow up if needed

**Interview Protocol Form 002
(For Pre-Service Primary School Teachers)**

Date of Interview: _____

Researcher

SOL Koemhong (Mr.)
Ph.D. Student
International Christian University (ICU)
Tokyo, Japan

Interviewee

Name: _____
Sex: _____
Name of Training Center: _____
Contact Information: _____
Alphanumeric code: _____

I would like to thank you again for agreeing to participate in this interview. As I have already mentioned to you before, the study seeks to (1) understand the efficiency of pre-service primary school teacher education (12+2 program) in Cambodia, (2) identify what makes effective continuous professional development (CPD) for primary school teachers in Cambodia, and (3) explore challenges that can hinder the effective provision of both pre-service teacher education and in-service teacher education/CPD. In order to achieve the overall research purpose, this study will critically look into three key stakeholders' perspectives, namely in-service teachers, pre-service teachers, and teacher trainers.

This study will provide a fresh understanding of contemporary primary school teacher education in Cambodia (both pre-service teacher education and in-service teacher education/CPD) – a domain that has been relatively underdeveloped and underrepresented in the international literature. Meanwhile, the study will also support further development and planning of primary school teacher education in Cambodia and other comparable contexts by offering research-based data and recommendations to inform relevant stakeholders. The study may also be able to extract any theoretical insights that could be valuable or applicable to the broader context.

This interview will take about an hour, during which I will be asking you some questions with the purpose of addressing my research questions. To facilitate note-taking, this interview will be recorded for the purpose of transcription for analysis.

You have read the participant information sheet and signed the consent form indicating that you have understood all the study's key aspects and your rights as a participant. If you still have questions, please let me know.

Today's interview will focus on one central aspect. That is, 'Your perceptions of the efficiency of pre-service primary school teacher education/training in Cambodia (12+2 program).'

Before we begin the interview, do you have any questions?

If any questions arise during the interview, please feel free to ask. I will be more than happy to clarify them.

Your perceptions of the efficiency of pre-service primary school teacher education/training in Cambodia (12+2 program)

I would like to examine your perceptions of the efficiency of pre-service primary school teacher education/training (12+2 program) in Cambodia in terms of building the knowledge base of pre-service primary school teachers for teaching.

To what extent does the pre-service teacher education/training (12+2 program) build the following knowledge of pre-service primary school teachers for teaching at the primary school level?

- **Content Knowledge** (for example, Khmer literature, mathematics, sciences, and social studies)

Prompts:

- Facts, concepts, theories, and principles in the subjects
- Interrelation and connection within a subject

- **General Pedagogical Knowledge** (broad principles and strategies of classroom management and organization, as well as general knowledge of learners and learning, curriculum, aims and purposes of education)

- **Pedagogical Content Knowledge** (knowledge of a specific subject)
 - Purposes of teaching a subject
 - Students' understanding, conceptions, and misconceptions of specific topics in a subject
 - Clear understanding of curriculum materials of a particular subject area
 - Instructional strategies and presentations for teaching specific topics in a subject

- **Knowledge of Context** (contextual factors concerning students, schools, community, and government)

Prompts:

- Socio-economic
- Community expectations and culture
- School/government-related guidelines and policies

- Technology

Is there anything you would like to add/talk about?

Post Interview:

- Thanks to the interviewee
- Reassure confidentiality
- Ask permission to follow up if needed

**Interview Protocol Form 003
(For Teacher Trainers)**

Date of Interview: _____

Researcher

SOL Koemhong (Mr.)
Ph.D. Student
International Christian University (ICU)
Tokyo, Japan

Interviewee

Name: _____
Sex: _____
Teaching Courses: _____
Length of Service: _____ (by the interview date)
Workplace: _____
Contact Information: _____
Alphanumeric code: _____

I would like to thank you again for agreeing to participate in this interview. As I have already mentioned to you before, the study seeks to (1) understand the efficiency of pre-service primary school teacher education (12+2 program) in Cambodia, (2) identify what makes effective continuous professional development (CPD) for primary school teachers in Cambodia, and (3) explore challenges that can hinder the effective provision of both pre-service teacher education and in-service teacher education/CPD. In order to achieve the overall research purpose, this study will critically look into three key stakeholders' perspectives, namely in-service teachers, pre-service teachers, and teacher trainers.

This study will provide a fresh understanding of contemporary primary school teacher education in Cambodia (both pre-service teacher education and in-service teacher education/CPD) – a domain that has been relatively underdeveloped and underrepresented in the international literature. Meanwhile, the study will also support further development and planning of primary school teacher education in Cambodia and other comparable contexts by offering research-based data and recommendations to inform relevant stakeholders. The study may also be able to extract any theoretical insights that could be valuable or applicable to the broader context.

This interview will take about an hour, during which I will be asking you some questions with the purpose of addressing my research questions. To facilitate note-taking, this interview will be recorded for the purpose of transcription for analysis.

You have read the participant information sheet and signed the consent form indicating that you have understood all the study's key aspects and your rights as

a participant. If you still have questions, please let me know.

Today's interview will focus on two main aspects as follows:

1. Your perceptions of the efficiency of pre-service primary school teacher education/training in Cambodia (12+2 program)
2. Challenges that can hinder the effective provision of pre-service teacher education/training (12+2 program)

Before we begin the interview, do you have any questions?

If any questions arise during the interview, please feel free to ask. I will be more than happy to clarify them.

Section 1: Your perceptions of the efficiency of pre-service primary school teacher education/training in Cambodia (12+2 program)

In this section, I would like to examine your perceptions of the efficiency of pre-service primary school teacher education/training (12+2 program) in Cambodia in terms of building the knowledge base of pre-service primary school teachers for teaching.

To what extent does the pre-service teacher education/training (12+2 program) build the following knowledge of pre-service primary school teachers for teaching at the primary school level?

- **Content Knowledge** (for example, Khmer literature, mathematics, sciences, and social studies)

Prompts:

- *Facts, concepts, theories, and principles in the subjects*
- *Interrelation and connection within a subject*
- **General Pedagogical Knowledge** (broad principles and strategies of classroom management and organization, as well as general knowledge of learners and learning, curriculum, aims and purposes of education)
- **Pedagogical Content Knowledge** (knowledge of a specific subject)
 - Purposes of teaching a subject
 - Students' understanding, conceptions, and misconceptions of specific topics in a subject
 - Clear understanding of curriculum materials of a particular subject area
 - Instructional strategies and presentations for teaching specific topics in a subject
- **Knowledge of Context** (contextual factors concerning students, schools, community, and government)

Prompts:

- Socio-economic
- Community expectations and culture
- School/government-related guidelines and policies
- Technology

Is there anything you would like to add/talk about?

Section 2: Challenges that can hinder the effective provision of pre-service teacher education/training (12+2 program)

In this section, I would like to explore challenges that can hinder the effective provision of pre-service teacher education/training in terms of producing qualified primary school teachers with a solid knowledge base for teaching.

Do you think the current pre-service teacher training curriculum (12+2) is good enough to produce primary school teachers with a strong knowledge base for teaching? Why do you think so?

To what extent has the curriculum been implemented? If not fully implemented, what are the barriers?

How about the teaching methods employed by teacher trainers in general? Do you think they are effective?

In general practice, are there enough opportunities for pre-service teachers to practice theories or get exposed to authentic classroom settings through regular observations or teaching practices? Can you elaborate?

Are there enough learning infrastructure and resources to support curriculum implementation and student learning? Can you explain?

According to some studies, there is a general trend that capable high school graduates choose not to enter the teaching profession, resulting in the recruitment of low-motivated and less competent graduates for the teacher training program. Is that also what you can see now? Can you elaborate?

What do you think about the qualifications of teacher trainers in general? Are they well-versed in their teaching areas?

Do you feel motivated and committed to your job? Why and why not?

Are there any management-related issues at either the school or government level that could affect the efforts to raise the quality of pre-service teachers in terms of their knowledge base for teaching?

Is there anything you would like to add/talk about?

Post Interview:

- Thanks to the interviewee
- Reassure confidentiality
- Ask permission to follow up if needed

Appendix B – Ethical Approval from the University

Notification of Investigation Results

Date: 4/30/2021

To (Applicant): Sol Koemhong (Adviser: Professor Sato Chizu)
From: President, International Christian University

Document No.: 2021-08
Name of Research Project: A Critical Exploration of Primary School Teacher Education in Cambodia: Perspectives from In service Teachers, Pre service Teachers, and Teacher Trainers
Responsible for Research: Sol Koemhong (Adviser: Professor Sato Chizu)

I herewith notify you of the following results of the Research Ethics Committee's investigation of the above named research project.

1. Decision: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Conditional approval <input type="checkbox"/> Changes recommended <input type="checkbox"/> Rejected <input type="checkbox"/> Not applicable
2. Reason: N/A
3. Remarks: N/A

※ If changes are recommended, investigation request must be resubmitted.

Signature:



Appendix C – Request Letter from Advisor to MoEYS



〒181-8585 東京都三鷹市大沢 3-10-2
3-10-2 Osawa, Mitaka-shi, Tokyo 181-8585, Japan

December 8, 2021

Dear H.E. Dr. Academician Hang Chuon Naron,

As Mr. Sol Koemhong's academic advisor, I am writing to seek your support in granting permission to Mr. Sol Koemhong to conduct his doctoral research at a number of public primary schools and teacher training/education colleges in Cambodia.

Mr. Sol Koemhong has been enrolled in our doctoral program in education since September 2020 at the Graduate School of Arts and Sciences, International Christian University, Japan. For his doctoral dissertation, entitled "**A Critical Exploration of Primary School Teacher Education in Cambodia: Perspectives from In-service Teachers, Pre-service Teachers, and Teacher Trainers,**" he plans to interview a number of in-service teachers, pre-service teachers, and teacher trainers in Cambodia and collect other necessary data. His research aims to understand the efficiency of pre-service primary school teacher education in Cambodia, explore challenges that can hinder the effective provision of both pre-service and in-service teacher education, and identify what makes effective continuous professional development for primary school teachers in Cambodia. I firmly believe that the results of his study will contribute positively to the development of primary school teacher education in Cambodia.

Therefore, I hope that you will grant permission to Mr. Sol Koemhong to conduct his research. Should you have any questions, please do not hesitate to contact me.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Chizu Sato', is written in a cursive style.

Chizu Sato, D.Phil.
Professor of Education
Director, Teacher Certification Program
Department of Education and Language Education
International Christian University
Email: satochizu@icu.ac.jp

Appendix D – Request Letter from Researcher to MoEYS

**ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ**

ខ្ញុំបាទឈ្មោះ **សល់ គឹមហុន** ជានិស្សិតថ្នាក់បណ្ឌិតដែលទទួលបានអាហារូបករណ៍របស់ រាជរដ្ឋាភិបាលនៃប្រទេសជប៉ុន មកបន្តការសិក្សានៅសាកលវិទ្យាល័យគ្រីស្ទានអន្តរជាតិ (International Christian University) នៅក្នុងទីក្រុងតូក្យូ ប្រទេសជប៉ុន។

**សូមគោរពជូន
ឯកឧត្តមបណ្ឌិតសភាចារ្យ រដ្ឋមន្ត្រីក្រសួងអប់រំ យុវជន និងកីឡា**

កម្មវត្ថុ: សំណើសុំការអនុញ្ញាតដើម្បីចុះប្រមូលទិន្នន័យ ដើម្បីសរសេរនិក្ខេបបទបញ្ចប់ការសិក្សាថ្នាក់បណ្ឌិត។

តាមរយៈ: ឯកឧត្តមបណ្ឌិត **ចាន់ សុភា** ប្រធាននាយកដ្ឋានបឋមសិក្សា។

យោង: លិខិតរបស់លោកស្រីសាស្ត្រាចារ្យ **ជិស៊ី សាតូ** (Chizu Sato) ចុះថ្ងៃទី០៨ ខែធ្នូ ឆ្នាំ២០២១។


សេចក្តីដូចមានចែងក្នុងកម្មវត្ថុ និងយោងខាងលើ ខ្ញុំបាទមានកិត្តិយសសូមជម្រាបជូនឯកឧត្តមបណ្ឌិតសភាចារ្យរដ្ឋមន្ត្រីមេត្តាជ្រាបថា ដើម្បីបញ្ចប់ការសិក្សាថ្នាក់បណ្ឌិតនៅសាកលវិទ្យាល័យគ្រីស្ទានអន្តរជាតិ និស្សិតត្រូវបំពេញគ្រប់លក្ខខណ្ឌរបស់សាកលវិទ្យាល័យ ដោយត្រូវសរសេរនិក្ខេបបទស្រាវជ្រាវសម្រាប់ដាក់ជូនសាកលវិទ្យាល័យ។ ក្នុងន័យនេះ ខ្ញុំបាទសូមការអនុញ្ញាតពីឯកឧត្តមបណ្ឌិតសភាចារ្យរដ្ឋមន្ត្រី ដើម្បីចុះប្រមូលទិន្នន័យសម្រាប់ការស្រាវជ្រាវក្រោមប្រធានបទ **“ការសិក្សាស៊ីជម្រៅទៅលើការអប់រំគ្រូបង្រៀនកម្រិតមូលដ្ឋានបង្រៀននៅបឋមសិក្សានៅក្នុងប្រទេសកម្ពុជា៖ ទស្សនៈរបស់គ្រូបង្រៀន គុណសិទ្ធិ និងគ្រូខ្មែរ”** ដែលនឹងប្រព្រឹត្តទៅចាប់ពីថ្ងៃទី០៣ ខែមករា ដល់ថ្ងៃទី២៨ ខែកុម្ភៈ ឆ្នាំ២០២២ នៅវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ វិទ្យាស្ថានគរុកោសល្យបាត់ដំបង សាលាគរុកោសល្យ និងវិភិក្ខុការខេត្តកណ្តាល និងសាលាបឋមសិក្សាមួយចំនួននៅក្នុងខេត្តកណ្តាល និងរាជធានីភ្នំពេញ។

សេចក្តីដូចបានគោរពស្នើសុំខាងលើនេះ សូមឯកឧត្តមបណ្ឌិតសភាចារ្យរដ្ឋមន្ត្រីមេត្តាអនុញ្ញាតឱ្យខ្ញុំបាទចុះប្រមូលទិន្នន័យដោយសេចក្តីអនុគ្រោះ។

សូមឯកឧត្តមបណ្ឌិតសភាចារ្យរដ្ឋមន្ត្រី មេត្តាទទួលនូវការគោរពដ៏ខ្ពង់ខ្ពស់អំពីខ្ញុំបាទ។

ថ្ងៃសុក្រ ៦កើត ខែមិគសិរ ឆ្នាំឆ្លូវ ត្រីស័ក ព.ស. ២៥៦៥

ទីក្រុងតូក្យូ ថ្ងៃទី១០ ខែធ្នូ ឆ្នាំ២០២១

ហត្ថលេខា

សល់ គឹមហុន

Appendix E – Official Permission from MoEYS



ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ

ក្រសួងអប់រំ យុវជន និងកីឡា

លេខ: ៣១១.....អយក. ២ ៧

ថ្ងៃ ២១ ១២ ខែ ១២ ឆ្នាំ ព.ស. ២៥៦៥
រាជធានីភ្នំពេញ ថ្ងៃទី ០៣ ខែ កញ្ញា ២០២២

ជម្រាបជូន

លោកនាយកវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ និងចាត់ដំបង
នាយកសាលាគរុកោសល្យ និងវិទ្យាស្ថានខេត្តកណ្តាល
លោកប្រធានមន្ទីរអប់រំ យុវជន និងកីឡារាជធានីភ្នំពេញ និងខេត្តកណ្តាល

កម្មវត្ថុ: សំណើសុំគោលការណ៍ចុះប្រមូលទិន្នន័យ ដើម្បីសរសេរនិរ្តេបបទបញ្ចប់ថ្នាក់បណ្ឌិតរបស់និស្សិត
សល់ គឺមហុង។

យោង: ពាក្យស្នើរបស់លោក សល់ គឺមហុង ចុះថ្ងៃទី១០ ខែធ្នូ ឆ្នាំ២០២១។

តបតាមកម្មវត្ថុ និងយោងខាងលើ ខ្ញុំសូមជម្រាបជូន លោក ជ្រាបថា៖ ក្រសួងអប់រំ យុវជន និងកីឡា អនុញ្ញាតជូនលោក សល់ គឺមហុង ដើម្បីចុះប្រមូលទិន្នន័យសម្រាប់ការស្រាវជ្រាវក្រោមប្រធានបទ “ការសិក្សា ស៊ីជម្រៅទៅលើការអប់រំគ្រូបង្រៀនកម្រិតមូលដ្ឋានបង្រៀននៅបឋមសិក្សានៅក្នុងប្រទេសកម្ពុជា៖ ទស្សនៈគ្រូ បង្រៀន គុណសិទ្ធិ និងគ្រូឧទ្ទេស” នៅវិទ្យាស្ថានគរុកោសល្យរាជធានីភ្នំពេញ និងចាត់ដំបង សាលា គរុកោសល្យ និងវិទ្យាស្ថានខេត្តកណ្តាល សាលាបឋមសិក្សាក្នុងរាជធានីភ្នំពេញ និងខេត្តកណ្តាល សម្រាប់ សរសេរនិរ្តេបបទបញ្ចប់ថ្នាក់បណ្ឌិតរបស់ខ្លួនកំពុងសិក្សានៅប្រទេសជប៉ុន ដែលនឹងប្រព្រឹត្តទៅចាប់ពីខែ មករា ដល់កុម្ភៈ ឆ្នាំ២០២២។

អាស្រ័យដូចបានជម្រាបជូនខាងលើ សូម លោក ជ្រាប និងសហការផ្សព្វផ្សាយដល់អ្នកពាក់ព័ន្ធតាម ការគួរ។

សូម លោក ទទួលនូវការរាប់អានដ៏ស្មោះពីខ្ញុំ

បង្គាប់ជូន

- រដ្ឋបាលខេត្តរាជធានីភ្នំពេញ និងខេត្តកណ្តាល
- អគ្គនាយកដ្ឋានអប់រំ
- ខុទ្ទកាល័យឯកឧត្តមបណ្ឌិតសភាចារ្យរដ្ឋមន្ត្រី “ដើម្បីជ្រាបជាព័ត៌មាន”
- លោក សល់ គឺមហុង “ដើម្បីមុខការ”
- កាលប្បវត្តិ
- ឯកសារ-នា.បឋមសិក្សា



រដ្ឋមន្ត្រីក្រសួងអប់រំ យុវជន និងកីឡា

បណ្ឌិតសភាចារ្យ ហង់ជួន ណារ៉ុន

Appendix F – Participant Information Sheet

Participant Information Sheet

Research Title

A Critical Exploration of Primary School Teacher Education in Cambodia: Perspectives from In-Service Teachers, Pre-Service Teachers, and Teacher Trainers

I would like to invite you to take part in a study entitled “**A Critical Exploration of Primary School Teacher Education in Cambodia: Perspectives from In-Service Teachers, Pre-Service Teachers, and Teacher Trainers.**” Before you decide, you need to understand why the study is being done and what it would involve you. Please take the time to read the following information. You may ask questions if anything you read is not clear to you or would like more information. Please take the time to decide whether or not to take part.

What is the purpose of the study?

The study seeks to (1) understand the efficiency of pre-service primary school teacher education (12+2 program) in Cambodia, (2) identify what makes effective continuous professional development (CPD) for primary school teachers in Cambodia, and (3) explore challenges that can hinder the effective provision of both pre-service teacher education and in-service teacher education/CPD. In order to achieve the overall research purpose, this study will critically look into three key stakeholders’ perspectives, namely in-service teachers, pre-service teachers, and teacher trainers.

This study will provide a fresh understanding of contemporary primary school teacher education in Cambodia (both pre-service teacher education and in-service teacher education/CPD) – a domain that has been relatively underdeveloped and underrepresented in the international literature. Meanwhile, the study will also support further development and planning of primary school teacher education in Cambodia and other comparable contexts by offering research-based data and recommendations to inform relevant stakeholders. The study may also be able to extract any theoretical insights that could be valuable or applicable to the broader context.

Why have I been invited?

You have been invited to take part in this study because I have been advised that you would be able to give me an insight into the research questions being studied.

Do I have to participate?

It is up to you to decide. I will go through the information sheet with you. Then, I

will ask you to sign a consent form showing you agreed to participate in the study. You are free to withdraw at any time during the data collection process without any consequence to yourself.

What will I have to do?

You will be asked to attend a semi-structured in-depth interview in which you will be invited to respond to a set of various questions concerning what is being studied. The duration of the interview will last no longer than one hour. The interview will be audio-recorded with your consent, and a transcription of the interview will be made for the purpose of analysis.

What are the possible disadvantages and risks involving my participation?

It is hoped that participating in this study will be a positive experience for you, and it is anticipated that you should not experience any kind of discomfort or risk.

What are the benefits of taking part in the study?

Participating in this study may not help you personally. However, this study will be an opportunity for you to voice your experiences and perspectives. Moreover, the information collected for the study will advance our understanding of contemporary primary school teacher education in Cambodia and will support further development and planning of primary school teacher education in Cambodia and other comparable contexts through research-based recommendations.

Will my participation in the study be kept confidential?

Yes. The information you provide will be kept securely according to the general regulations of data protection. The interview transcript will be anonymized. I will assign an alphanumeric code to the interview and remove your personal information. Moreover, the information you provide will be used for research purposes only and will not be shared with anyone. The collected data will be stored for the duration of five years after the study has been completed and will be destroyed thereafter. The purpose is to deal with inquiries, scrutiny, or audits (if any) after the research results are disclosed.

What will happen if I do not carry on with the study?

You have the right to withdraw from the study at any time during the data collection process, and all the information and data collected from you will be destroyed. Your personal information will be removed from all the study files.

What will happen to the results of the study?

Information collected from your interview will be analyzed and written up for my doctoral dissertation and possibly academic journals for publication. If requested, I will be happy to provide you with a summary of my research findings and conclusions when the study has been completed.

Further information and contact details

I am based at the Graduate School of Arts and Sciences, International Christian University, 3-10-2 Osawa, Mitaka-shi, Tokyo, 181-8585, Japan. My contact details are as follows:

SOL Koemhong

Email address: g239703e@icu.ac.jp / koemhongsol.edu@gmail.com

If you have any questions or concerns about this study, you can ask to speak to me, and I will do my best to answer your questions or resolve a problem. In the event of a more formal complaint, please contact my advisor at International Christian University, Professor SATO Chizu, at satochizu@icu.ac.jp.

Appendix G – Study Consent Form

Study Consent Form

Research Title

A Critical Exploration of Primary School Teacher Education in Cambodia: Perspectives from In-Service Teachers, Pre-Service Teachers, and Teacher Trainers

Name of Researcher

SOL Koemhong (Email: g239703e@icu.ac.jp / koemhongsol.edu@gmail.com)

Name of Advisor

Professor SATO Chizu (Email: satochizu@icu.ac.jp)

In signing this consent form, I acknowledge that:

1. I have read and understood the participant information sheet for the study. I have had the opportunity to consider the information, ask questions, and have them answered satisfactorily.
2. I understand that my participation is voluntary and that I have the right to withdraw from the study at any time during the data collection process without any consequence to myself.
3. I agree to my anonymized data being used in study-specific reports and, if any, articles that will appear in academic journals.
4. I agree to take part in the study.

Name of Participant

Date

Signature

Name of Researcher

Date

Signature