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Review Article

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Research on teacher education and implications for improving the quality of teacher education in Cambodia

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ABSTRACT

This article aims to provide a review of important findings from previous research on teacher education and the quality of teaching to offer the way forward for improving the quality of teacher education in Cambodia. The article begins by highlighting key findings from several studies on teacher education before examining the quality teaching model (QTM) developed by Australian researchers. The article then discusses key factors influencing teacher quality and teaching quality. It also discusses major issues concerning teacher education in Cambodia and offers suggestions for improving teacher education quality in the Cambodian context. The article argues that significant efforts are required to enhance teacher education in Cambodia. In particular, QTM may be worth considering in refining the quality of teacher preparation, teaching quality, and educational reform in the Cambodian teacher education context.

Keywords: teacher education, teaching quality, teacher quality, quality teaching model, factors, Cambodia

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INTRODUCTION

Teacher education is an important topic that deserves scholarly attention. In a recent study, Gore (2023) found that new teachers could perform well in the classroom as their more experienced colleagues. This is an interesting finding that seems to contradict general assumptions concerning teacher and teaching. Gore (2023) also argued that the problem in debates about schools and education is the relentless use of "teacher quality" as a proxy for understanding "teaching quality" (para. 25, emphasis in original). This argument implies that teaching quality is made possible by various factors, one of which is teacher quality.

Given the importance of teacher education, this article aims to provide a review of important findings from research concerning teacher education, with a focus on a series of studies by Jennifer Gore, a Laureate Professor of Education at the University of Newcastle in Australia. Drawing on secondary sources and employing document analysis as a research method, the article also aims to provide recommendations for improving teacher education in Cambodia, a developing context that has recently experienced new developments in teacher education. To this end, this article is divided into four parts. First, it discusses key findings from research on teacher education. It then examines the quality teaching model (QTM) before presenting a summary of findings from relevant research on factors influencing teacher quality and teaching quality. It also highlights the achievements and current issues facing teacher education in the Cambodian context. Finally, the article concludes with a set of recommendations for enhancing teacher education in Cambodia.

RESEARCH ON TEACHER EDUCATION

In the constantly transforming social landscape, teacher education plays a pivotal role in shaping the future of society as it equips individuals with the knowledge and skills needed to successfully navigate the fast-changing world. According to Darling-Hammond (2000a), teacher education is crucial as it prepares teachers for teaching. As she put it, "teachers who have had more preparation for teaching are more confident and successful with students than those who have had little or none" (Darling-Hammond, 2000a, p. 166). Darling-Hammond (2010) noted that effective teacher education can have a powerful impact on student achievements. It was also reported that student achievements were enhanced by well-qualified teachers who had graduated from quality pre-service teacher education programs, while student achievements were hurt by inexperienced and unqualified teachers (Darling-Hammond, 2010). This indicates the significance of quality teacher education programs.

Gore's (2001) study, focusing on what matters in teacher education, showed that when there was no common framework for teacher educators to follow, the differences in their approaches to teacher education would negatively impact the quality and effectiveness of teacher education programs. The framework of classroom practice introduced in the study comprised four dimensions, such as

Table 1. Productive pedagogy dimensions, items, & key questions addressed (Gore et al., 2004, p. 378)

Dimensions & items	Key questions
Intellectual quality	
Higher order thinking	Are higher order thinking and critical analysis occurring?
Deep knowledge	Does the lesson cover operational fields in any depth, detail or level of specificity?
Deep understanding	Do the work and response of the students provide evidence of understanding of concepts or ideas?
Substantive conversation	Does classroom talk break out of initiate/respond/evaluate pattern & lead to sustained dialogue between students, & between teachers & students?
Knowledge problematic	Are students critiquing and second-guessing texts, ideas and knowledge?
Metalanguage	Are aspects of language, grammar, and technical vocabulary being foregrounded?
Relevance	
Knowledge integration	Does the lesson range across diverse fields, disciplines and paradigms?
Background knowledge	Is there an attempt to connect with students' background knowledge?
Connectedness to the world	Do lessons and the assigned work have any resemblance or connection to real life contexts?
Problem based curriculum	Is there a focus on identifying and solving intellectual and/or real-world problems?
Supportive classroom environment	
Student control	Do students have any say in the pace, direction or outcome of the lesson?
Social support	Is the classroom a socially supportive, positive environment?
Engagement	Are students engaged and on-task?
Explicit criteria	Are criteria for student performance made explicit?
Self-regulation	Is the direction of student behavior implicit and self-regulatory or explicit?
Recognition of difference	
Cultural knowledges	Are diverse cultural knowledges brought into play?
Inclusivity	Are deliberate attempts made to increase the participation of all students of different backgrounds?
Narrative	Is the teaching principally narrative, or is it expository?
Group identity	Does teaching build a sense of community and identity?
Citizenship	Are attempts made to foster active citizenship?

(1) intellectual quality,

(2) relevance,

(3) supportive classroom environment, and

(4) recognition of difference among students (Gore, 2001).

Gore (2001) believed that this four-dimensional framework was imperative for student teachers to succeed in their future career as a teacher since the framework could serve as a guide for them. It is obvious that the framework has the capacity to unify teacher trainees to produce greater learning outcomes for their prospective students.

Gore et al.'s (2004) work added to this line of inquiry. It discussed in detail the four-dimensional framework of classroom practice, known as "productive pedagogy" (see **Table 1** for items under each dimension). The authors concluded that to facilitate a more thorough assimilation of productive pedagogy among student teachers, it is important to introduce it at the beginning of their teacher education program to enable better integration with their existing knowledge base for instructional practice. It is noteworthy that integration of pedagogical content knowledge into the curriculum of student teachers should commence during the initial stages of their academic pursuits. This is perhaps in contrast with conventional concept–assuming that students need to study this subject in the last year of their learning curriculum.

Recently, Gore and Rosser (2022) examined issues concerning teacher professional development. The findings showed that while content-focused professional development was pivotal for improving the quality of teaching, getting teachers involved in the professional learning community across diverse subject matters substantially enhanced the entire school. The authors also argued that adopting a QTM and quality teaching rounds as part of pedagogy-focused professional development was a fundamental mechanism for enhancing instruction across the board. This adoption is not exclusive to specific topics, year levels, or subjects. This evidence suggests that educators and educational institutions should acknowledge the significance of prioritizing pedagogical excellence and the integration of reliable teaching quality models in professional development efforts, rather than exclusively focusing on content knowledge.

Another recent study by Gore et al. (2023), which investigated the association between years of teaching experience and teaching quality in Australia revealed that there was little to no correlation between a teacher's number of years of teaching experience and instructional quality. These findings are interesting and are contrary to the popular assumption that teaching experiences typically have a significant impact on students' learning outcomes and that experienced teachers perform better than their new colleagues. As Gore et al. (2023) argued, it is necessary for policy initiatives to enhance teaching quality by focusing on providing high-impact professional development throughout the teachers' careers. Thus, it could be argued that regardless of how long the experience is, the quality of the instruction is reliant upon the individual teacher and how well-trained he or she is.

QUALITY TEACHING MODEL

QTM was developed in 2003 by two experts, Associate Professor James Ladwig and Laureate Professor Jennifer Gore from the University of Newcastle, Australia (Education NSW Government, 2023). QTM is a systematic framework of pedagogy that was developed after substantial research had been synthesized of classroom variables that have a significant impact on student learning (Gore et al., 2022, 2023; Ladwig & King, 2003). QTM encompasses three integral dimensions, including intellectual quality, quality learning environment, and significance (Gore & Rickards, 2021; Gore et al., 2023). Intellectual quality refers to acquiring a thorough understanding of essential knowledge. Quality learning environment focuses on

Table 2. Quality Teaching Model (Gore & Rickards, 2021, p. 338)

Intellectual quality	Quality learning environment	Significance
Deep knowledge	Explicit quality criteria	Background knowledge
Deep understanding	Engagement	Cultural knowledge
Problematic knowledge	High expectations	Knowledge integration
Higher-order thinking	Social support	Inclusivity
Metalanguage	Students' self-regulation	Connectedness
Substantive communication	Student direction	Narrative

cultivating dynamic and engaging learning spaces, while significance deals with exploring the interconnectivity between student learning and the broader context of society (QT Academy, 2023). Each dimension embodies six essential components, as shown in **Table 2**.

As can be seen in **Table 2**, intellectual quality encompasses several elements, including deep knowledge and deep understanding, higher-order thinking, and substantive communication, among others. For the quality learning environment, there are also six elements ranging from explicit quality criteria to high expectations and to student direction. In terms of significance, the important elements include background knowledge, inclusivity, and connectedness, among other factors.

KEY FACTORS INFLUENCING TEACHER QUALITY & TEACHING QUALITY

Professional Development

Across the globe, there exists a consensus among educational systems regarding significance of quality of teaching as the foremost internal factor influencing student academic achievement (Darling-Hammond, 2000b; Gore et al., 2017; Timperley & Alton-Lee, 2008). Effective teacher quality and teaching quality are crucial drivers of student performance and can be influenced by a range of factors including professional development, teacher qualification and preparation, and teacher professional support. Previous studies have shed light on the influence of professional development on teaching quality (Goe & Stickler, 2008; Gore et al., 2023; Mamites et al., 2022; Phillips, 2008). Some researchers have invested their time and energy into developing a professional training and development structure that ultimately enhances teachers' ability to teach (Gore et al., 2017; Mamites et al., 2022). Gore and Rosser (2022) argued that it is essential to design and develop training contents that not only focus on content knowledge but also emphasize pedagogical competencies. In this sense, teachers should be given access to a vast range of professional development opportunities, including reflective studies of supported learning, outside study for higher qualifications, orientation, and mentoring (Phillips, 2008). Thus, it is imperative for educational institutions to prioritize continuous professional development of their teachers to ensure that they are equipped with the latest teaching techniques and strategies as it contributes to enhancing the quality of education and reflects a commitment to the development of their students and entire schools.

Teacher Qualification & Preparation

Besides professional development, teacher qualification and preparation can also be another important factor affecting teaching quality. According to a large-scale mixed-methods study on teacher quality and student achievement conducted by Darling-Hammond (2000b), teacher preparation and certification were by far the most significant predictors of students' reading and maths achievement among all other variables. It was highlighted that teachers' certification status and their degrees in the subject areas they teach had a significant relationship with students' learning achievement. Thus, it is convinced that teachers who have advanced degrees or certifications in their subject areas could also have a deeper understanding of their subject matter, which can positively influence the quality of their instruction.

More specifically, Fauth et al. (2019) conducted a study with a sample size of 1,070 students and 54 primary teachers. The study showed that three dimensions of teacher competence had a statistically significant impact on students' interest in learning the subject matter. These three dimensions included self-efficacy, teaching enthusiasm, and pedagogical content knowledge. However, only one dimension of teacher competence (e.g., self-efficacy) had a positive relation with students' performance. The authors noted that this correlation was mediated by three domains of teaching quality, including classroom management, cognitive activation, and supportive climate. In this sense, it can be seen that teachers' competency plays a particularly significant role in producing teaching quality, which results in enhancing students' learning achievement. A number of other studies (e.g., Baumert et al., 2010; Fauth et al., 2014) have also found that these three fundamental dimensions of teaching quality were considered critical for fostering student learning and motivation.

Teacher Professional Support

Apart from teacher qualifications, teacher professional support could be another major contributing factor for the quality of instruction. Frome et al. (2005) noted that the proportion of educators taking part in mentorship or induction initiatives greatly influenced middle school mathematics performance. Furthermore, systematic, regular, and purposeful instructional coaching could have the capacity to improve teacher effectiveness, teachers' retention rates, as well as students' academic performance (Zugelder, 2019). In this respect, initiating such a program in schools to provide better support to teachers, particularly novice teachers, is imperative for enhancing the quality of education and fostering a rich learning environment. However, for instructional coaching to be effective, Zugelder (2019, p. 182) stated that it must be "strategic and carefully constructed." He also noted that for coaches to be able to assist teachers in developing their capabilities, it is essential to comprehend the values of teacher development and shared leadership commitment. All the key factors influencing teacher quality and teaching quality are summarized in **Figure 1**.

TEACHER EDUCATION IN CAMBODIA

Recent Developments

Having reviewed relevant research on the topic, we now turn to discuss teacher education in Cambodia. In recent years, there have been considerable efforts to improve the quality of teachers in the Cambodian education system. Ministry of Education, Youth, and Sport

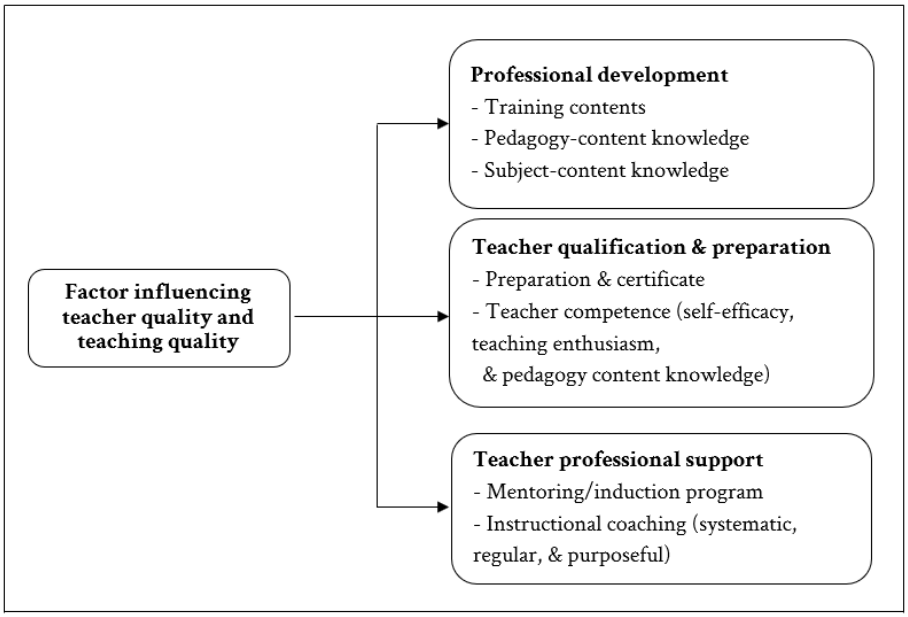

Figure 1. Key factors influencing teacher quality & teaching quality (Source: Authors)

(MoEYS), with support from various international organizations, development partners, and non-governmental organizations, has introduced a number of policies aimed at enhancing learning and teaching quality as well as teacher education quality. Key policies include policy on curriculum development 2005-2009 (MoEYS, 2004), policy on human resource in education sector (MoEYS, 2012), teacher policy (MoEYS, 2013), teacher policy action plan (MoEYS, 2015a), master plan for capacity development in the education sector 2014-2018 (MoEYS, 2015b), continuing professional development framework for teachers and school directors 2019 (MoEYS, 2019), and capacity development master plan in education sector 2020-2024 (MoEYS, 2021), among other policy documents. These policies play a significant role in providing guidance or roadmaps for improving the quality of teachers and teacher education in Cambodia.

In addition to the formulation and implementation of various policies, there are ongoing efforts to upgrade teachers' skills and qualifications. With the support from UNICEF and World Bank, MoEYS has jointly worked with relevant key educational institutions such as National Institute of Education (NIE), Royal University of Phnom Penh (RUPP), Teacher Education Colleges (TECs), and Khemarak University (KU), to conduct training programs for secondary teachers and teacher trainers (Heng & Sol, 2022; Sot et al., 2019). It is important to note that secondary school teachers were trained by NIE, RUPP, and TECs while teacher trainers were trained by KU and RUPP, with different time spans.

This first established program was to upgrade secondary school teachers to the bachelor's degree (BA) level. This was provided by different partnered institutions including NIE, RUPP, and TECs. NIE upgrading program, for example, was launched in 2016 with 700 selected teachers, joining the piloted program, known as a fast-track BA, with 60 credits within the span of six months. Despite the intensive nature of the program, 698 enrolled teachers successfully completed it and received their BA degrees (Sot et al., 2019). The second initiative, called alternative upgrading program, was offered by RUPP to train 2,200 secondary school teachers in Bachelor of Education or BA programs with 60 credits over a period of one year and a half. This program was rigorously designed by RUPP in conjunction with World Bank, and a teacher upgrading program team from MoEYS. As a result, the first cohort of 215 teachers and the second cohort of 841 teachers have been trained, while the rest are completing their training (Sot et al., 2019). Later on, this upgrading program will continue to be provided by both RUPP and TECs.

Considering teacher trainers upgrading initiatives, MoEYS selected KU and RUPP as the educational providers to implement this program, aiming to upgrade teacher trainers to master's degree levels. In 2015, 61 teacher educators were sponsored by UNICEF to attend a master's degree program for three semesters at KU (Sot et al., 2019). In the meantime, 16 other teacher educators were also selected to join this master's program, yet they were self-funded. Therefore, the total number of participants increased to 77; however, only 55 trainees successfully graduated from this degree-upgrading program, while 22 sponsored trainees failed, as they did not meet the program's attendance requirements (Sot et al., 2019).

Given that the quality of the training program by KU was questionable, RUPP was selected to address the issue. In 2019, RUPP established a master's degree program, inclusively designed for teacher trainers by starting to recruit the participants to join the first cohort beginning in 2019. Thus, there is a notable increase of teacher trainers who have been upgrading their qualifications to obtain a master's degree (Sot et al., 2019). It is conceivable that these initiatives play a pivotal role in addressing the challenges of teaching quality in Cambodia, which in turn leads to the improvement of teaching quality and the production of high-quality human resources in Cambodia.

Remaining Challenges

Although there have been significant efforts by the government, particularly through MoEYS, to improve teacher education (No & Sok, 2022; Pich, 2017), many issues remain. During the Khmer Rouge Regime (1975-1979), Cambodia experienced a great loss of teachers and academics (Ayres, 2000; Heng, 2023). Since the collapse of the Khmer Rouge, a great deal of efforts and projects have been implemented to improve teacher education in Cambodia; however, the quality of

teacher education remains a major concern. As King (2018, 2022) noted, teacher capacity building was primarily conducted through a cascade model, which is also used nationally by MoEYS to train teachers and disseminate directives. This model involves a small group of experts training senior personnel, who then train those at the lower level, with the aim of cascading skills and knowledge downwards. However, King (2018) argued that the cascade model used by MoEYS to develop the skills and abilities of teachers is limited, particularly in terms of quality, because this method dilutes the content as it passes through distinct levels of the system, and it also restricts what skills are deemed essential and who can acquire them. No and Heng (2017) also noted that "capacity building activities are limited and follow a piecemeal approach, with less evidence of usefulness for or sustained impact on teaching" (p. 48). Moreover, as continuous professional development is not linked to career advancement, potential pay increments, or opportunities for promotion, teachers tend to lack true enthusiasm for such training programs (Doeur & Heng, 2023; No & Sok, 2022). Thus, the existing professional development model requires further refinement to be aligned with the needs of teachers and to foster a sense of enthusiasm and motivation among them.

To date, however, many individuals responsible for conducting teacher training programs may lack proper qualifications and are perhaps not familiar with the latest teaching approaches (Sot et al., 2022; Tao & Kao, 2023). The inadequacy of content knowledge and learner-centered pedagogy provision, along with insufficient skills in diagnosing pre-service teachers' misconceptions and suggesting appropriate solutions, is a common issue among Cambodian teacher trainers; therefore, there is a pressing need to enhance both the content knowledge and pedagogy-content knowledge of the prospective teachers (Van et al., 2018). Similarly, as Pich (2017) argued, a number of teacher trainers had inadequate proficiency in imparting substantive content knowledge, leading them to continue to utilize a teacher-centered instructional approach rather than a student-centered pedagogical one. In this regard, it is worth noting that some teacher educators remain to leverage a conventional teaching approach, which may negatively affect the new generation of student teachers. Moreover, as previous studies have revealed, there is a disconnect between theoretical concepts and real-world applications in Cambodia's pre-service teacher education programs (Pich, 2017; Tandon & Fukao, 2015; Williams, et al., 2016). This suggests that the training quality has not reached the standard of the 21st-century education due in part to the continued utilization of conventional teaching approaches. Darling-Hammond (2000b) has argued that a close integration of theory and practice can be achieved by means of meticulous planning of clinical experiences as well as by utilizing case studies, action research, and performance evaluation to showcase the efficacy of teacher training programs. Hence, it is important for Cambodian teacher trainers or educators to develop their expertise both pedagogically and technically.

Furthermore, despite a nearly trebled increase in teacher salaries since 2013 (Sot et al., 2022), the issue of teacher compensation and teaching profession status remains a major concern (Hang, 2018; Heng & Sol, 2022; King, 2018; No & Heng, 2017; Tandon & Fukao, 2015). Sot et al. (2022) pointed out that the remuneration of teachers to date was relatively low when compared to other careers that demand a university degree. The authors added that the salary status offered to government schoolteachers was inadequate to meet basic family needs and was comparatively lower than those of the salary levels provided to teachers in private schools. This suggests that individuals who possess higher levels of qualifications and do not have a robust passion for teaching are more likely to choose a different career. Thus, the teaching profession arguably fails to attract high-achieving students and/or graduates who could be key factors to enhancing quality teacher education in Cambodia. As No and Heng's (2017) study has revealed, even though teaching is viewed as a secure and life-long profession, it is still deemed unattractive on account of its stressful nature, low compensation, and strict processes of recruitment and selection. This has led some teachers to consider leaving the profession–a phenomenon also happening in the context of Cambodian higher education (Heng, 2022; Kwok et al., 2010).

Initiatives Taken to Address the Challenges

To respond to these challenges, MoEYS (2015a) has set up a strategic plan to improve teacher education quality with several major objectives and has produced some notable achievements. For example, two new Teacher Education Colleges (TECs), namely the Phnom Penh Teacher Education College (PTEC) and the Battambang Teacher Education College (BTEC), have recently been established (Em et al., 2022; No & Sok, 2022). PTEC is upgraded from a combination of the Phnom Penh Regional Teacher Training Center and the Phnom Penh Municipality Teacher Training Center, whereas BTEC is upgraded from a combination of the Battambang Regional Teacher Training Center and the Battambang Provincial Teacher Training Center (MoEYS, 2018). These two TECs are intended to enhance the quality of education received by teacher trainees with lengthier periods of training–extending from two years after high school education (12+2) to four years after high school (12+4) (Em et al., 2022; MoEYS, 2018; No & Sok, 2022), and from one year after a bachelor's degree (Bachelor+1) to two years after a bachelor's degree (Bachelor+2) (Em et al., 2022; Heng & Sol, 2022; Sot et al., 2019). In addition, the two TECs have undertaken extensive recruitment processes to secure highly qualified teacher educators through competitive selection rounds and appointment of new management teams (Sot et al., 2022). There are also plans to upgrade other regional teacher training centers into TECs to ensure pre-service teachers are equipped with adequate subject and pedagogy content knowledge upon graduation from teacher training institutions across the country (Sot et al., 2019). Thus, it can be argued that the quality of teacher training has improved, thereby making enrollment in TECs more attractive to young talented students who will pursue careers as teachers in state schools.

Despite the efforts and new initiatives that have been introduced to develop the quality of teacher education, a lot more has to be done to ensure the quality of teaching and teacher education in Cambodia. In the next section, we draw insights from previous research to offer suggestions for improving the quality of teacher education in Cambodia.

SUGGESTIONS FOR IMPROVING QUALITY OF TEACHER EDUCATION IN CAMBODIA

No doubt, enhancing the quality of teaching is a complex and challenging issue that lacks straightforward solutions (Gore, 2021). However, drawing on secondary sources, this review article makes five suggestions for addressing concerns regarding limited teacher quality in Cambodia.

First, it is essential to develop a new policy or to effectively implement the existing policy to attract highly-achieving students into the teacher training programs so that they can pursue their studies to become teachers joining the future teaching workforce. It is also important to make the teaching career more appealing to university graduates by increasing the teacher salary and social status, thereby attracting them to become teacher trainees. This strategy has been considered by MoEYS through the provision of incentives to teacher trainees during their training period. Thus, it may be hard but not impossible, particularly when a clear vision is in place. In the case of teacher recruitment in Australia, for example, the national decree stipulates that individuals who belong to the top 30% of the population are preferred for teaching positions (Australian Institute for Teaching and School Leadership, 2017; Gore, 2021). As education is the backbone of economic growth, more investment in teacher education and retention is deemed a wise decision, as it is essential to enhance the quality of teaching by ensuring that a new generation of teachers are well-qualified and good teachers are kept in the profession.

Second, increasing teachers' wages alone may not be sufficient for improving the quality of teacher education in Cambodia; thus, it is imperative for MoEYS to develop a newly-suitable teaching quality framework that is contextually aligned with the unique needs and characteristics of Cambodia's education landscape. To achieve this, it is important to form a research or teaching team led by experts specialized in teacher education who can, with a clear vision and right expertise, contribute to improving the quality of teacher education in Cambodia. Although MoEYS has been doing this work, as evidenced by the intention to offer adjunct professorship to experienced educators or researchers to support teacher training institutions (Chhun, 2023), more needs to be done to ensure that teacher education in Cambodia is following a standard, evidence-based framework. In this sense, it may be important to consider successful models like QTM implemented in Australia. Once a suitable teacher training framework is developed, the specific training programs can be piloted in leading teacher training institutions, such as PTEC and BTEC, before it is rolled out to other teacher training institutes or centers across the country.

Third, considering the limitations of teacher professional development through a cascade or piecemeal approach, it is pivotal for MoEYS and relevant partners to consider developing an innovative professional development program. In this regard, it may be worth adapting quality teaching rounds introduced in Australian schools that have been found to enhance teachers' morale and teaching quality (Gore & Bowe, 2015), as well as students' learning achievement (Gore et al., 2021). Quality teaching rounds is a pedagogy-oriented method to professional development that involves "groups of teachers in professional learning communities" (Gore et al., 2021, p. 2). The collaborative nature of quality teaching rounds is an important aspect that enables teachers of diverse backgrounds to engage in meaningful dialogues about lesson observation, analysis, and discussion (Bowe & Gore 2017; Gore & Rosser, 2022). This could empower individual teachers to be involved in professional learning communities by sharing their knowledge, skills, and experience with one another with continuous reflection and feedback through observation and discussion to enhance their teaching performance. The program, however, needs to be carefully implemented with robust coordination and support from school principals. It is also important to develop professional development training by concentrating on pedagogical content knowledge, rather than just inclusively subject-focused contents (Gore & Rosser, 2022). As Gore et al. (2023) argued, to improve teaching quality, it is vital to prioritize the provision of highly impactful professional development opportunities for teachers throughout their professions. Simply put, effective training should be tailored to meet teachers' unique requirements and be able to demonstrate tangible outcomes with concrete monitoring and evaluation tools.

Fourth, although MoEYS strives to respond to the shortage of training periods and improve the quality of teacher education by integrating a new model, there are currently only two TECs, while 20 other teacher training centers, excluding the National Institute of Education, remain relatively underdeveloped and their training programs unchanged. Therefore, it is essential to quickly expand the TEC model to other locations to meet the needs for improving teacher education in Cambodia (Sot et al., 2022). Meanwhile, it is important to lengthen the teacher training programs in other teacher training centers (i.e., four regional teacher training centers and 16 provincial teacher training centers) throughout the country to ensure that teacher trainees are well-equipped with not only subject matters and pedagogy but also technology-enhanced learning tools, English proficiency, and research skills.

Fifth and finally, while the quality of teacher trainers or educators and teaching programs are necessary for contributing to the quality of teacher education, it is important to develop the capabilities of teacher trainers and reassemble the existing curriculum. However, such a reform is not a task that can be done overnight, it requires time, effort, and a comprehensive strategic plan to ensure that the reform measures undertaken are of the highest quality with good implementation and evaluation and monitoring measures. In this sense, action or policy research conducted by a team of educational experts is required to better understand the current situation in order to make informed decisions moving forward. As Van et al. (2018) noted, coaching and mentoring could play a substantially vital role in enhancing the capability of teacher trainers. Moreover, it is vital to encourage teacher trainers or educators to upgrade their qualifications by obtaining at least a master's degree or even higher in the disciplines in which they specialize (Sot et al., 2022). Regarding the training curriculum, in contrast to prevailing beliefs, it is important to introduce pedagogy-related subjects at the early stage of the academic program (i.e., the first year) so that the teacher trainees are equipped with the prerequisite competencies for effective teaching practices (Gore et al., 2004).

CONCLUSIONS & RECOMMENDATIONS

This review article has highlighted key research findings from previous research on teacher education, briefly discussed QTM, and examined key factors influencing teacher quality and teaching quality. The article has also discussed issues concerning teacher education in Cambodia, focusing on the recent developments, remaining challenges, and initiatives taken to address the challenges. This article has also offered some suggestions for improving the quality of teacher education in the Cambodian context.

Based on the review, it can be concluded that significant efforts are required to enhance the quality of teacher education, and the prevailing assumptions may not be aligned with the outcomes of research on teacher education. In Cambodia, where teacher quality remains limited due to various challenges discussed above, it is perhaps essential to consider the principles of quality teaching rounds and QTM introduced

in the Australian context. These frameworks may help to pave the way for refining the quality of teacher preparation, initiating further teacher education reform, and ultimately improving teacher and teaching quality in Cambodia.

This article has shown the quality of teaching and teachers are determined by several important factors, including professional development, teacher qualification and preparation, and teacher professional support. There are also many challenges that have hindered the quality of teacher education in Cambodia. Therefore, it is crucial that concerned stakeholders, particularly MoEYS and educational institutions, take extra steps and engage in collective efforts to find ways to make a difference to the education system and teacher education in the Kingdom of Cambodia.

Key stakeholders such as teachers, university lecturers, and researchers also have pivotal roles in identifying effective teaching and learning methods as well as research topics that could be conducted to provide insights into how teacher education in a developing context, such as Cambodia, can be improved or reformed in an effective way. Other stakeholders such as students, parents, and the community are also key actors in pushing for better teacher education and teaching quality. They can play a more proactive and responsible role in ensuring that the teacher education system in Cambodia can produce teachers who are qualified for their profession, have the ability to enhance their students' learning outcomes, and can contribute to improving the quality of teaching in Cambodian education.

Finally, this review article has some implications for future research. First, given that TECs have just been established and the teacher upgrading programs have been introduced for several years, research should be conducted to examine the impact of this new teacher training model on students' learning outcomes and the quality of teacher trainees as well as the teacher training institutions. Second, it may be worthwhile to conduct research examining the correlation between years of teaching experiences and the quality of teaching in the Cambodian context. The results of such research will be instrumental in informing policies on teacher professional development and pre-service teacher education. Third, future research is suggested to explore factors influencing teaching quality and teacher quality in developing contexts like Cambodia in order to understand how the quality of teacher education can be effectively enhanced despite the limited resources and funding.

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Data availability: Data generated or analyzed during this study are available from the authors on request.

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