Cambodian J. Int. Stud. **3**, 63-81

OPINION PIECE

Teacher Education: a Key to Teacher Quality Enhancement in Cambodian Schools

Pagna Chea[a,1] and Neavea Tep[b]

[a] Part-time lecturer, School for Foreign Languages,
The University of Cambodia, Phnom Penh, Cambodia

[b] Accreditation Committee of Cambodia, Phnom Penh, Cambodia

Abstract

This review aims to identify key contemporary ways for enhancing teacher quality through teacher education in order to inform Cambodian policymakers and educators how to make effective decisions on improving teacher and education quality. Human capital theory is used to examine significant causality between components of teacher education or other alternatives and teacher quality and productivity. A review of the literature on research and practices in other countries found four significant patterns namely the measurement of Teacher education's effectiveness, quality management system, collaboration from key stakeholders, qualified teacher educators and teacher's self-efficacy and motivation that could provide new answers and information for teacher education and national education policy in Cambodian school context. Practical implications are also discussed. It is argued that having only teacher education in place without evaluation on its effectiveness, proper quality assurance system, collaboration from key stakeholders, qualified teacher educators, strong student teacher's motivation is insufficient to bring about and enhance teacher quality and productivity.

I. Introduction

Education in Cambodia suffered systemic destruction during the civil war and most especially under the subsequent Pol Pot regime from 1975 to 1979; then, most teachers were killed, whilst schools, libraries and other materials and facilities were destroyed. Since then, there has been a

[1] pagnacheanallipe77@icloud.com

significant recovery and the education system has emerged onto the national and international stage; however, there remains a number of prominent issues such as accessibility, education quality and governance. Among those issues, education quality remains a key concern for improving the school education sector in Cambodia.

Table 1 Some summary statistics related to the school education system in Cambodia (adapted from Ministry of Education, Youth, and Sport, 2014).

Indicator	**2009-2010**	**2010-2011**	**2011-2012**	**2012-2013**	***Target*** †
Primary Teacher-Classroom Ratio	0.78	0.78	0.77	0.76	*0.95*
Primary Pupil-Class Ratio	38.6	38.0	36.6	36.9	*45.5*
Repetition rates (%)					
Primary	8.9 (7.8)*	7.1 (6.2)	5.8 (5.0)	5.3 (4.5)	*6.0 (6.0)*
Lower secondary	2.3 (1.5)	2.0 (1.3)	1.8 (1.2)	1.5 (1.0)	*1.4 (1.2)*
Upper secondary	2.8 (1.7)	1.8 (1.1)	2.2 (1.5)	1.7 (1.1)	*2.2 (1.2)*
Dropout rates (%)					
Primary	8.3 (7.8)*	8.7 (8.7)	8.3 (7.8)	3.7 (4.7)	*6.0 (6.0)*
Lower secondary	18.8 (19.4)	19.6 (20.2)	21.7 (21.9)	20.0 (18.7)	*13.0 (15.0)*
Upper secondary	11.2 (10.8)	11.8 (10.7)	13.7 (13.1)	10.1 (9.5)	*9.0 (8.0)*
Completion rates (%)					
Primary	83.1 (83.7)*	85.3 (85.0)	89.7 (89.9)	87.3 (87.6)	*95.0 (95.0)*
Lower secondary	48.6 (44.2)	44.4 (44.2)	42.1 (41.6)	40.6 (40.3)	*52.0 (51.0)*
Upper secondary	25.9 (22.4)	28.5 (25.2)	27.8 (26.1)	27.0 (25.2)	*30.0 (28.0)*

† For Academic Year 2012-2013
***** Total (Female students)

Table 1 shows that, on average, primary schools have only about 75% of their planned-for complement of teachers, indicating that there are problems in recruiting new ones. It also implies that there has been a failure to expand the catchment of these schools to cover all eligible students.

Whilst repetition and dropout rates have fallen better than expected for both boys and girls, completion rates for primary students have lagged behind. Similarly, repetition rates have fallen for lower and upper secondary students, together with dropout rates for the latter; however these results did not meet the targets aimed for, as also reflected in the statistics for completion rates (Table 1). Overall, these data suggest a bottle-neck for the transition from primary through to upper secondary education.

The data regarding, repetition, dropout and completion rates are likely to reflect a variety of factors, including the economic circumstances and other constraints on the parents. In such cases, education may be perceived as a low priority in the short-term: poor-quality teaching may fail to have the promise of long-term benefits.

In response to these issues, the government has set a national education policy in which there are three key components, one of which is concerned with improving teacher quality (MOEYS, 2014).

Studies elsewhere have identified a number of variables which are important in designing and implementing policies to improve educational output: *e.g.* class-sizes, numbers of teachers and peer cooperation, school leadership and parental involvement. For instance, research on what contributes to improving classroom teaching and student learning and achievement in New Zealand (Hattie, 2003) found that among six influential factors including students, home, schools, peers, teachers and principals, teachers contribute to fifty percent to student learning and attainment; moreover, what brings about significant impact is teachers' expertise and profession. Hence, it is imperative to identify the mechanism determining teacher quality.

Amid possible alternatives recommended by some organizations such as the Grattan institute (Jensen *et al.*, 2012) and UNESCO (2014), this study will consider teacher education as a pivotal recommendation since it involves teachers' learning and their productivity in the effective transfer of knowledge. Complementarily, this study attempts to uncover reasons leading to success and failure of teacher education so that decision-making on teacher and education quality enhancement is better informed.

Therefore, this paper addresses two key research questions: (1) does teacher education have any impact, either positive or negative, on teacher quality?; and (2) what are the critical components contributing to enhancing teacher quality? In doing so, it comprises three sections: a theoretical

conceptualizing framework; a brief review of some of the relevant literature relating to the proposed model; and a discussion, with conclusions regarding potential practical implications.

II. A Theoretical Conceptual Framework

The study employs Human Capital Theory (Baug, 1976; OECD, 2001a; Schiller, 2006) to analyze the relationship between teacher education and teacher quality. This theory was first proposed by Theodore Schultz in 1960 (Baug, 1976), and has then been employed in much of the economic and educational literature and research. Based on OECD's definition (2001a), it is defined as "the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being". Such capital can be developed through formal education and training, workplace training, and 'on-the-job' and daily informal learning. Schiller (2006) also defines human capital as knowledge and skills that workers possess and can be accumulated as a product of education, training and experience. Therefore, this theory is used here to explore the links between components of teacher education or other alternatives and teachers' learning and productivity through education, training and/or professional development.

1. Teacher Quality

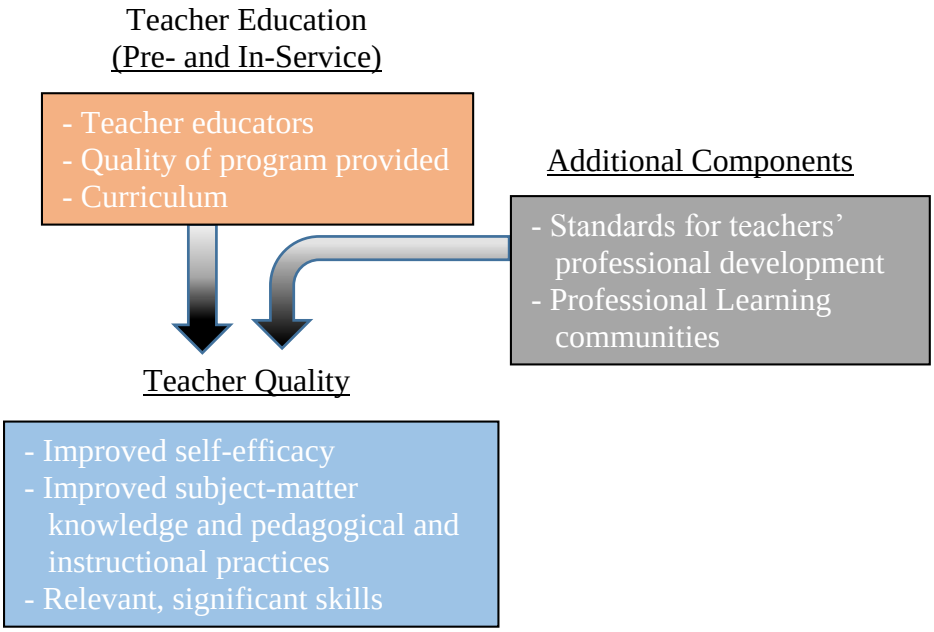
There have been various definitions of teacher quality by different authors and theorists. Tomlinson (2000) and Walsh (2001) see teacher quality as their ability to impact student learning; the latter author's research found that these abilities are concerned with their verbal ability or cognitive ability rather than with the ability to pass some tests to obtain teacher certification. Others have identified the ability to work collaboratively with their peers to develop a positive school climate, to improve overall school performance, and to engage in mutual support and professional learning as being important (OECD, 2001b; O'Day, 2002; Louis *et al.*, 2010). Others have categorised teacher quality into two main components – (a) good teaching is teaching that "comports with morally defensible and rationally sound principles of instructional practice," and (b) successful teaching is teaching that produces the intended learning outcome (Fenstermacher and Richardson, 2005, p. 189). Alternatively, Darling-Hammond (2006) and Monk (1994) define teacher quality in terms of having not only a good knowledge of the subject-area(s) and competences they are teaching but also a broad repertoire of teaching methods and strategies to meet diverse student needs. Thus effective teachers should have strong classroom management

skills, including clarity in presentation of ideas, well-structured lessons and appropriate pacing (Hattie, 2009).

2. Ways to Enhance Teacher Quality

Figure 1 provides an overview of the conceptual model used here. It illustrates the relationship between routine factors related to a teacher's prior training and continuing in-house development with other outside ones related to required standards for their professional development and the potential role of professional learning communities in their overall development through improved self-efficacy, improved subject-matter knowledge, and pedagogical, instructional practices and other relevant skills.

Figure 1 Conceptual framework of the present study.



The primary means are through formal pre-service and in-service teacher-training offered by the government or educational institutions. Thus, for example, Dean *et al.* (2005) concluded that:

> Teacher quality is a central pillar … Without high-quality effective teachers, we cannot realize the goal of high achievement for all students. In turn, if pre-service teachers do not receive the highest quality teacher preparation, then we cannot meet the demand for high quality and effective teachers.

In addition, relevant recommendations and key educational policy agendas from other countries and international organizations (*e.g.* Lieberman and Miller, 1999; Aitsl, 2012; UNESCO, 2014)

indicate various ways to supplement this basic requirement, congruent with the need to further increase teacher quality. Whilst it is recognised that some such as rigorous entry requirements or registration, subsequent teacher evaluation and the provision of incentives are important in ensuring the development of teachers' abilities, skills, knowledge and practices, the following will focus on the role of professional learning communities (PLCs) and their standards for professional development.

III. A Consideration of the Proposed Model

The previous section indicates that various authors have concluded that teachers' abilities, skills, practices and educational and subject-specific knowledge are essential in enabling them to achieve set goals, and improve, facilitate, analyze, research and foster and be efficacious in learning and teaching inside and outside of the classroom.

The conceptual model in Figure 1 provides a basis for identifying how a teacher's performance may be related to particular outcomes and their overall productivity, as the ultimate measure of the quality of their teaching.

1. Teacher Education and Teacher Quality

Teacher education might be expected to have a positive impact upon teachers' learning, professional development, sense of self-efficacy and teaching effectiveness, and, ultimately, teacher quality through appropriate and effective pedagogy and the quality of programs provided.

Consistent with this, research by the American Educational Research Association found that there is positive association between teachers who have taken mathematics at college and the mathematics learning of their high school pupils, and another finding is graduates who have completed teacher education programs have higher average SAT/ACT scores than the general pool of students entering college (Cochran-Smith and Zeichner, 2005). Although there is evidence showing those positive connections, the research was limited in studying other subject areas and grade levels, which hinders the study of the clear relationship between teachers' productivity and attending teacher education.

Furthermore, program pedagogy might influence the receptivity and learning of student teachers as well. For instance a program may be ineffective when field experience is not provided because there might be unanticipated hurdles and impossibilities of linking intended outcomes to actual

implementation of teaching practice. Cochran-Smith and Zeichner (2005) found that there were numerous factors bringing about contradiction between student teachers' receptivity and intended outcomes of the programs. Those factors include student teachers' prior beliefs and experience, coursework, and contemporary perceptions of the curriculum, students and pedagogy. Interestingly, this evidence further reveals that when engaging student teachers with field experience in which collaboration and professional development are fostered, prospective teachers are more likely to willingly implement desired practices such as methods of instruction.

In addition to external influences, teachers' self-efficacy can also influence their quality and effectiveness of teaching as teachers become aware of their abilities, weaknesses and strengths in achieving desired outcomes for student learning and self-development. Tschannen-Moran and Hoy (2001) defined a teacher's sense of efficacy as "judgments of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated". Teachers who have a high sense of efficacy are able to cognitively regulate their motivation in achieving goals (Bandura, 1997), such as adopting more positive classroom management strategies (Emmer and Hickman, 1991). Other studies have found that a teacher's sense of efficacy tends to increase at least to some extent after attending teacher preparation programs (O'Neill and Stephenson, 2012; Canrinus and Fokkens-Bruinsma, 2014). For example, Canrinus and Fokkens-Bruinsma conducted a study examining possible changes in 83 student teachers' motives for becoming teachers, their professional commitment and their self-efficacy after a year of teacher education. Though the authors found that student teachers' motivation to teach, in relation to their social values, may decrease after a year of teacher education, their self-efficacy probably became enhanced. They argued that good teaching through a teacher education institution seems to have an influence on this latter process.

Similarly, the study of Australian pre-service teacher sense of efficacy on four-year undergraduate primary program in 2009, in which 38 primary teaching programs, and 33 four-year undergraduate primary teaching programs were selected as a sample, found that final-year pre-service teachers have a healthy sense of efficacy for teaching as they begin their professional lives, with the majority feeling they can influence the education of their students quite a bit (O'Neill and Stephenson, 2012, p. 544). Therefore, it is likely that teachers' sense of efficacy tends to attribute to their initial training within a teacher preparation program.

Nevertheless, a clear link between constituents of teachers' sense of efficacy and indicators of teacher quality may not be explicitly evident. There might be other factors bolstering or diminishing their self-efficacy other than educational program they attended. Canrinus and Fokkens-Bruinsma (2014, p. 274) concluded that finding the right balance between specific behaviours and more psychological constructs of a sense of self-efficacy remains a challenge for teacher education institutes.

More generally, other studies have considered the quality of teacher education in terms of the selection of quality candidates; the quality of the program, its curriculum and the educators; and the importance of quality assurance or audit systems for monitoring these (*e.g.* Blake, 1994; Blake and Lansdell, 2000; Brickman, 2010; Chong, 2012; Goh, 2012). Those authors discuss concerns on what are the practical and theoretical knowledge and skills conducive to effective teaching practice; and the quality of teacher educators to deliver those contents effectively. Thus, they discuss issues and premises of quality assurance or management systems appropriate for improvements in accountability and the further developing of quality programs and thus, ultimately, the professional development of quality teachers. Although such systems might be expected to have positive impacts on the quality of teacher education, it could still be counterproductive if objectives are set or implemented inappropriately. For instance, a study of quality assurance in teacher education in England (Blake, 1994) found five emerging issues caused by developing a rigorous quality assurance system, including different interpretations of the word 'quality'; increasing workload for academic staff for implementing inspection; an unhelpful link between funding and quality assessment; overlap and confusion of authority by the bureaucratic manner of the system; and the fact that the values espoused may be irrelevant to the primary stakeholders.

Although a quality assurance system is seen as a good way of guaranteeing quality service providers, it is imperative to consider its possible side-effects. Overall, however, setting a system of standards in order to recognise high-performing teachers would seem to be a good way of seeking to encourage the development of teaching quality (see Section III.3, below).

On the other hand, there has been scepticism about the often unclear effects of teacher education on teacher quality. Thus there appear to be insignificant or even negative impacts. Also, Cochran-Smith and Zeichner (2005) found that the majority of the teachers who have attended a subject-

specific study program can teach only a mechanical repetition of the basic facts rather than an understanding of the underlying principles. This indicates that teacher's grasp of their subject matter is limited, in spite of attending teacher preparation programs.

Moreover, it is difficult to determine future teachers' motivation and commitment their students-to-be when they are attending teacher preparation programs. Thus teacher education might not have any impact on the development of teacher quality; it rather depends not only on individual teachers' pre-existing attitudes but also their subsequent professional 'maturation' through the further development of a sense of efficacy, with a motivation and broad commitment for the sake of their students.

2. Ways to Further Enhance Teacher Quality

The capacity for professional development is not a discrete objective to be completed by a basic educational program; it requires on-going improvement and the learning of new knowledge and skills. Although teacher education does equip teachers with various important skills relevant to improving student learning when they start their career, it is imperative for individual teachers to continue pursuing and advancing their subject-matter knowledge and their understanding and implementation of best teaching practices, within and outside of their schools. In order to better achieve the latter, the present paper will limit its focus to the role of so-called professional learning communities (PLCs) in helping to improve the standards of teachers through enhancing their professional development.

Lieberman and Miller (1999) identified PLCs as "places in which teachers pursue clear, shared purposes for student learning, engage in collaborative activities to achieve their purposes, and take collective responsibility for student learning." In relation to professional development, in their review of literatures on the connection between PLCs, teaching practice and student learning, Vescio *et al.* (2008) proposed that PLCs' main advantage is the improvement in teachers' instructional practices as a result of changes in teaching culture including through collaborative inquiry, continuous learning and increased teacher authority and empowerment. However, there has not been much quantitative research conducted to prove those effects; thus Timperley and Alton-Lee (2008, cited by Robinson *et al.*, 2008) argued that PLCs could be counterproductive if implemented inappropriately without referencing to evidence for effective teaching professional development as a result.

3. Setting Standards

Standards for teachers' professional development are seen as effective tools in determining and maintaining key areas for improvement and enhancement of teaching quality. These have been adopted by many countries as part of their educational policies so as to establish control over the quality of teaching: for example, the National Board for Professional Teaching Standards (NBPTS) in the United States; the Professional Standards for Teachers in Australia; and the Malaysian Teacher Standards (MTS) system. Thus Australia has combined the standards with certification of excellent teaching by identifying Highly Accomplished and Lead Teachers (Aitsl, 2012), as a crucial component of a broader strategy of increasing teacher quality by focusing on the development of, and the recognition and support for, excellent practitioners. Similarly, Malaysia has adopted the MTS as a means of strengthening teacher quality through rigorous methods of assessing teacher performance (Goh, 2012). That such systems are effective in raising teaching quality is indicated by findings that NBPTS-certified teachers significantly outperformed those who had no certification on almost all performance dimensions (Hattie and Clinton, 2008; Smith *et al.*, 2008).

Whilst it has thus been argued that standards are likely to have direct influence overall on teachers' capacity development, how they may do so is less clear. Ingvarson and Rowe (2008, p. 19) have proposed that the following characteristics may effectively bring about such significant impacts: thus they should –

- be grounded in clear guiding conceptions of the rationale and objectives of the exercise of assessing teacher performance;
- have valid expectations of what teachers need to know and do in order to promote quality opportunities for students to learn their particular subject;
- delineate expectations regarding the main dimensions of a teacher's professional development of a particular subject over time, given adequate opportunities for this;
- identify the unique features of what teachers know and how they present it; and
- be assessable, based on observable and potentially quantifiable features and actions.

However, the practical implementation of these standards as a means of improving teaching quality raises certain issues. First, although teacher educators should play a significant role in the effective preparation for, and implementation of, these standards (Goh, 2012), this may alienate novice or

inexperienced teachers. This reinforces evidence that some student teachers' motivation diminishes after attending a teacher-education program (Canrinus and Fokkens-Bruinsma, 2014): the authors explicate that there is chasm between the ideal perceptions that student teachers have about teaching before attending teacher education and their actual experiences in the field.

Second, methods of evaluating teacher quality by using those standards are far more important than the standards themselves, because validity and reliability are critical. For example, Goh (2012) found that there was a "rhetoric-reality gap" in a study of the standards for the MTS system in Malaysia: the actual practice differed from what was prescribed in competency statements about what a teacher is expected to be capable of doing as part of their teaching role.

Related to this rhetoric-reality perception, Ingvarson and Rowe (2008) found that the prescription and value of the standards for teacher development are unconvincing and unmeasurable regardless of conveying salary improvement, attractive career path, quality and professional development. Hence, it is important that teacher education and/or teacher educators need to be involved in realizing the effectiveness of standards for teacher quality enhancement.

IV. Improving Teacher Quality in the Cambodian Context

Constructive discourse on the importance of teacher training on improving teacher quality and education quality in Cambodia has been problematic in the absence of any quantitative and qualitative studies.

Based on a study of relationship between education, teacher training, and the economy in Cambodia since the fall of the Pol Pot regime in 1979, Duggan (1996) reviewed various aspects of education system, including in-service and pre-service training and other components such as program content, curriculum, physical facilities and infrastructure of schools and teacher training colleges within the country. Subsequently, both Cambodian policymakers and the international community have not invested confidentially on enhancing teacher training, teacher educators and teacher training curriculum, which leave little opportunity for improving education quality and specifically teacher quality.

Both Cambodian policymakers and international community such as development partners showed less confident in investing in enhancing teacher education and its curriculum, and training teacher

educators. This in turn offers little opportunity for improving teacher quality and eventually education quality as a whole.

In Cambodia, the Ministry of Education, Youth and Sport has enacted a teacher policy action plan (Teacher Training Department, 2015) which also emphasizes on standards for teachers in hopes for enhancing teachers' learning, capacity development and professionalism, yet any studies on methods of measuring and observing what teachers know and do and main dimension of professional development have not been addressed in the policy or its implementation. Hence, this could bring about limitation to the policy's effectiveness as the standards' characteristics, which could clearly define their effectiveness and productivity (Ingvarson and Rowe, 2008), are not technically considered.

Motivation[2] can be a key catalyst leading individual teachers to set and achieve their goals. Thus, if student teachers or teachers become demotivated, they might lose their willingness to pursue better teaching quality and their further professional development.

Hitherto, the implementation of most educational policies around the world, including in Cambodia, has considered the teacher as one variable determining the linear progression of student learning and achievement: conventionally, inputting teacher education together with their ability, skills and professionalism will determine how the goals of educational policies are likely to be achieved. On the other hand, a more progressive approach considers that good teachers should be considered as change-agents: rather than simply providing support for such a linear increase, they should be 'mediating variables', inspiring their students to further develop their latent talents in an enhanced, non-linear fashion.

In the case of Cambodia, Kim and Rouse (2011) concluded that policies related to the expected impact of teacher education on teacher quality will be of limited use, until teachers have the professional capacity to reflect on their teaching practices think and until their broad commitment is cultivated and respected. This means teachers' realization and commitment to active and conscious participation in achieving education goals and change regardless of socio-economic and political pressure are strongly related to commitment to excellence and quality rather than solely emphasizing on either pre-service or in-service teacher training. While it seems that PLCs might

[2] The cognitive decision-making process through which goal-oriented behavior is initiated, energized, directed and maintained: Huczynski and Buchanan (2013, p. 292).

be favorable for continuously building teachers' capacity, its ambiguous process and effectiveness could limit its potential usefulness in Cambodia.

In the light of evidence and recommendations given by various authors, there appear to be four major emerging issues regarding the teacher education's abilities to enhancing teaching quality in the school setting. First, it appears that the assessment of a teacher's accumulated knowledge after the teacher education program or other types of professional development are difficult to measure. Second, an appropriate quality management system of teacher education programs is fundamental in determining the effectiveness or otherwise of teacher education in enhancing teacher quality. Third, teacher quality and effectiveness of teaching are likely to by mainly influenced by certain critical elements, including effective pedagogy, program content and the teacher educators involved. Lastly, the sources of individual teachers' self-efficacy and motivation are also crucial factors bringing about desired teacher quality. Each of these issues will be considered in turn.

i. Measurement of the effectiveness of Teacher Education Where effects have been measured, it remains hard to determine any overall positive, negative or other relationship between teacher education and productivity because different studies have yielded contrasting evidence in terms of teacher's abilities and student achievement. For example, Boyd *et al*. (2008, cited in Harris and Sass, 2010) found a significant relationship between productivity and some specific elements of teacher preparation programs. On the other hand, Harris and Sass (2010) employed different methodologies in order to look for unbiased evidence of a relationship between teacher preparation programs (college entrance exam and specific courses taken subsequently) and productivity, and found that there is no evidence that teachers' college entrance exam scores or pre-service (undergraduate) training were related to productivity. The authors argued that teacher productivity is context-specific, unrelated to the standardized teacher education including skills irrelevant to student achievement. Little research on this has been done in Cambodia to determine if there is a quantitative relationship between teacher education or other factors and teacher quality; for example, it is not known whether and how the curriculum provided by teacher preparation programs has to be adapted to the actual demands of the schools' teaching and learning environment(s), something which policymakers need to take into account and make changes if necessary.

Despite the foregoing ambiguous evidence regarding the contribution of teacher-education programs to the subsequent performance of their outputs overall, these programs must play a fundamental role: the question is how to optimise this.

ii. The Importance of a Quality Management System for Teacher Education This has to take into account both the technicalities of implementation and possible knock-on side-effects, as noted in Section III.3 above. To this end, it has been suggested that evaluation includes a combination of formative and summative dimensions to monitor long-term effects for quality sustainability (Chong, 2013). For instance, the quality management framework for teacher education used in Singapore applies a decision-oriented evaluation approach based on 'Context, Input, Process and Products' (CIPP: Stufflebeam and Shinkfield, 2007) to assess the planning and implementation of programs and the outcomes: such an evaluation is considered to be essential for accountability in the improvement within a framework of appropriate values, skills and knowledge (Chong, 2013). It also supplies regular and continuous reviews for the primary stakeholder to make informed decision. In Cambodia, whilst the government has recently put a quality assurance system in place regarding teacher education policy (MOEYS, 2014), there has not yet been any studies on appropriate mechanisms of quality assurance for teacher preparation programs to guide the implementation of strategies that could guarantee effectiveness of the programs and avoid any shortcomings within the system.

iii. Likely Critical Elements Determining Teacher Quality and Productivity The conclusions of Section IV.1 notwithstanding, some countries consider that certain elements play an important role in influencing teacher quality. For instance, the Singapore government has made a heavy investment in teacher education because they believe that this produces successful teachers with a strong subject-content knowledge, pedagogical expertise, and classroom management techniques for the 21st century (Jensen *et al*., 2012). Their teacher education system guarantees the employment of student teachers, as a result of a tripartite relationship between the National Institution of Education (NIE), the Ministry of Education and schools (Jensen *et al.*, 2012). The latter mechanism fosters effective collaboration between the three main players in terms of continual feedback on quality teacher education courses and the use of research to develop and enhance curricula and the student teachers' learning of effective teaching practices and skills. Interestingly, Singaporean government also put in place education policy acknowledging that

certification is equivalent to a Bachelor's degree, one source of motivation for prospective teachers to acquire significant skills and pursue quality teaching. As a result, Singapore was ranked in the top three of the 2012 PISA ranking (OECD, 2013). Best practices of Singapore teacher education show that key components of the programs have to be carefully prepared with primary stakeholders in a collaborative fashion. As an effective curriculum is highly context-specific, collaboration between teacher education and key stakeholders could likely be the best means of such adaptation. Likewise, sources of teachers' motivation have to be also identified congruently with the learning process so that teachers will focus sharply on their learning and profession rather than only socio-economic factors.

In addition, various authors (*e.g*. Blake and Lansdell, 2000; Goh, 2012; Goodwin and Kosnik, 2013) suggest that teacher-educators play a vital role in ensuring the effectiveness of following the curriculum and standards set by the governments, by improving teachers' capacity to meet actual demands of both student learning and recent educational developments. Therefore, teacher educators should not only ensure adequate knowledge of the subject and standard instructional practices, but also the latest skills and knowledge from wider domains. Goodwin and Kosnik (2013) recommended that, to rejuvenate teacher education, teacher educators should be recruited and supported to have a broad mandate, an expansive world-view, a collaborative approach, skills to enact rich curriculum, and inquiry-based and problem-solving skills and knowledge.

iv. The Importance of Teachers' Self-Efficacy and Motivation The need for teachers' sense of commitment necessitates stakeholders to identify and nurture particular individuals, including those who may not have stood out during their teacher education programs. O'Neill and Stephenson (2012) suggest that teacher education programs need to pay close attention to build up the future teachers' sense of efficacy: this includes through helping them to realise their abilities in leading a class, including through verbal persuasion and vicarious experiences. Based on this foundation, individual teachers' accumulated professional experience, together with observations and feedback from others such as peers or administrators.

Also of fundamental importance is that teachers must be in the necessary physiological and affective state in order to effectively conduct their classes (Bandura, 1997, cited by O'Neill and Stephenson, 2012): they should be in the right mood, not fatigued or stressed by outside worries. Hence, it is critical that stakeholders are aware of such problems and help nurture those who are

deserving through constructive measures which remove the impediments causing deteriorating physiological and affective states.

V. Conclusions and Practical Suggestions

The aim of this study was to identify critical elements for enhancing teacher quality in secondary schools. It was proposed that teacher quality is dependent on a number of factors: qualified teacher educators and the level of effectiveness of teacher education, quality management systems in schools, collaboration from key stakeholders, and teacher's self-efficacy and motivation.

In order to further encourage Cambodian educators, the government and policymakers in their efforts to improve teacher education and teacher quality, the following practical steps are suggested.

- Conduct quantitative research on the relationship between teacher education and the accumulated student teacher's knowledge in order to identify the extent to which teacher education leads to teacher quality enhancement. Such research will explicitly assist policymakers in conducting cost-benefit analysis for funding projects on enhancing teacher quality through teacher education in any schools and areas in Cambodia.
- Sources of individual teachers' self-efficacy, motivation and commitment should be clearly identified and nurtured attentively because they could lead individual student teachers and teachers to realizing their professional quality.
- An appropriate quality assurance system or mechanism against standards of teacher education programs have to be carefully considered regarding its premises and drawbacks so that it could guarantee both effectiveness of the programs and satisfaction from key stakeholders such as academic or program staff, administrators, teacher educators and student teachers.
- Standards for teacher professional development and PLCs are evidently able to develop teachers' capacity and professional; nonetheless, they have to be carefully, appropriately implemented by involving teacher education elements including mainly the responsive curriculum and teacher educators in order to gain optimum achievement of teacher quality.
- Key elements within teacher education have to be positively supported by key stakeholders such as the government, educator communities, schools, policymakers and educational service providers such as higher education institutions and teacher training centers because teacher

educators' competence, responsive teacher education curriculum, adequate physical infrastructure, learning and teaching materials, induction programs, on-going learning and collaboration are all vital ingredients for producing productive and effective graduates.

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