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Article

Models of Teacher Professional Development in Cambodian Primary Schools: A Review of Selected Cases

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Abstract

The attainment of the quality of education set in the SGD4 relied on the availability of adequate and qualified teachers at school. Cambodia has made a good progress in term of quantity and quality of pre-service teacher education and training (PRESET). However, Teacher Professional Development (PD) has been less attended although it has been recognized as important to upgrade teachers' qualifications. According to various studies and available data, the Ministry of Education, Youth and Sport has provided a few opportunities of PD such as short course workshops, cluster based technical meeting and school based technical meetings. However, it is found that these approaches are not effective as they did not make any changes to the practices in the classroom. This article reviewed four PD models in primary schools such as cooperation schools, normal schools, school supported by Save the Children and New Generation School with regards the conceptualisation of effective PD: needs assessment, organisation, determination of content, training process, follow-up and evaluation. Modalities, advantages and disadvantages for each model are presented and discussed.

Key Words: Professional Development (PD), in-service training (INSET), effective professional development, cascading, technical meetings, mentoring, professional learning community (PLC)

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Introduction

Education has been central to the national-building of all Cambodian governments since French decolonisation in 1953. Education became even more important for the reconstruction and rehabilitation of the shattered nation following the collapse of the Khmer Rouge, during which 80 percent of teachers were killed. Of the 22,000 teachers in Cambodia in 1968, 7,000 remained in 1979 but only 5,000 returned to teaching and only 300 intellectuals were left after 7 January 1979, the date that marked the end of Pol Pot's regime (MoE, 1980, p. 48). Despite the scarce human resources in the education sector, the new regime managed to build the education capacity at all levels (primary education, secondary education, higher education and adult education) so that children and adults were provided access to education. The regime aimed to quickly make schools and teaching-learning materials available and recruit teachers to work in some parts of the country (Asian Development Bank, 1996). In the early stage of this education development, the main focus was on providing access, therefore the quality of education was neglected. Under the slogan “Those who have a little level of education, teach those who have nothing and those who have a higher level of education, teach those who have lower level of education,” the government was able to recruit and train individuals who survived the Khmer Rouge with some educational background. Teachers were trained through a various forms of short-term training courses lasting one week, two weeks three weeks or one month. This practice continues today and has a strong impact on the quality of education in Cambodia.

Since 1993, education has been encouraged by globalization and regionalization to produce the human resources required to serve the socioeconomic development of the nation. In order to do this, the Ministry of Education, Youth and Sport's (MoEYS) vision is “to establish and develop human resources of the very highest quality and ethics in order to

develop a knowledge-based society within Cambodia” (MoEYS, 2014, p. 12). The envisioned knowledge-based society is a society with fast and sustainable development in which people have comprehensive knowledge of technology, a deep understanding of culture and decent living standards, living with happiness, peace and dignity. This envisioned society is in line with the Rectangular Strategy Phase III and the Industrial Development Policy 2015–2025, which aims to develop Cambodia from a low-income country to an upper medium-income country in 2030 and a high-income country in 2050. The education system plays an important role in achieving this vision through producing skilled human resources to serve the knowledge-based society. Under the leadership of Dr. Hang Chuorn Naron, who has been the Minister of Education since 2013, changes to make education sector more systematic were initiated. Eight reform priorities were set as policy agenda. Those education reform priorities are (1) improving the quality of learning and teaching; (2) increasing civil service and teachers’ salaries and introducing merit-based appointments; (3) providing more resources to the front-line service providers; (4) reforming the examination system; (5) establishing a policy think tank for education; (6) reforming youth and vocational skill programs; (7) implementing higher education reform and student job counselling; and (8) reforming the sport sector to prepare Cambodia to host the Southeast Asian Games in 2030.

These eight priorities aim to improve the quality and efficiency of the public service provided by MoEYS. These eight priorities were consolidated in the Education Strategic Plan 2014–2018, which lays out the three main policy objectives in education: “Ensuring equitable access to education service for all, enhancing the quality and relevance of learning, and ensuring effective leadership and management of education staff at all levels” (ESP 2014–2018). Consequently, the government and MoEYS have increased their commitment to the expansion of education at all levels, particularly basic education, and to improve the quality and relevance of education. The results of the expansion of the education sector, increased numbers of classrooms and schools and a pressing need for more qualified teachers in the schools. To improve the quality of education, a new curriculum was devised and learner-centered approaches to learning were introduced.

Although significant progress has been made under the new leadership of MoEYS, Cambodia’s education system is still in crisis, especially in terms of the quality of education. According to national

assessments of Grades 3, 6, and 8 conducted by the Department of Education's Quality Assurance of the MoEYS, student learning in language, mathematics and science is low. On average, according to 2016 MoEYS' assessment, less than 40 percent of the students could attain passing scores in these subjects.

Several factors that contribute to quality of children's learning have been studied by academics and policy-makers. Empirical analysis of different periods and education systems in all contexts suggests that the quality of education is reliant on the availability of adequate and qualified teachers at schools. The current basic education system in Cambodia is served primarily by poorly performing teachers with non-tertiary qualifications (Tandon and Fukao, 2015), under-qualified contract teachers and less accountable teachers. To tackle the issues pertinent to the quality of teachers, the MoEYS reform focuses on teacher training and development, teacher deployment, the development of teacher trainer centers and upgrading teachers' qualifications and teachers' career pathway. Within the context of the reform, MoEYS has developed a number of policies, standards, frameworks, sub-decrees and guidelines in order to guide the development of education in general and development of teachers in particular. Among these regulatory documents, there are six key policies related to teacher development as follows:

- 1- Teacher Policy Action Plan (2015)
- 2- Teacher education provider standards (2016)
- 3- Curriculum framework of general education and technical education (2016)
- 4- Ministerial regulation (Prakas) on equivalency program for upgrading teacher qualification (2016)
- 5- Teacher career pathways (2018)
- 6- Sub-decree on integrating and upgrading Battambang and Phnom Penh Provincial Teacher Training Center and Regional Teacher Training Center to become Teacher Education Colleges (2017)

Although there have been policy initiatives and programs to upgrade all unqualified teachers to qualified teacher status through using selection criteria for new teachers and introducing a short professional development programme, the majority of teaching staff do not hold bachelor's degree as required by Teacher Policy Action Plan that all teachers must have at least bachelor's degree in 2020. As shown in Table 1 below, approximately 80 percent of the teaching force hold certificates below a bachelor's degree.

Table 1. Number of teaching staff by educational level and school level of teaching

Level of education held by teacher	School level taught by teacher			Total (%)
	Pre-school	Primary school	Secondary school	
Primary	181	1,104	494	1,779 (1.93)
Lower secondary	1,662	12,521	5,084	19,267 (20.94)
Upper secondary	2,814	28,701	20,305	51,820 (56.32)
Bachelor	218	3,585	14,231	18,034 (19.60)
Master	2	95	995	1,092 (1.19)
Doctoral	0	3	12	15 (0.02)
Total	4,877	46,009	41,121	92,007 (100)

Source: MoEYS indicator in 2017

Based on this data, attention must be paid to the continuous professional development (PD) provided for teachers. Given that PD is recognized to be indispensable for dealing with issues pertinent to teaching quality and student's learning outcome, the Teacher Policy Action Plan sets two main actions related to professional development (PD) to be undertaken: institutionalizing a system of school-based in-service training (INSET) at all educational establishments (Teacher Education Policy Action Plan (TPAP) Action 6.2.2), including involvement of INSET trainers meeting Teacher Education Provider Standards (TEPS) criteria; and establishing and expanding mechanisms to provide continuous technical supports (TPAP Action 7.3.2), such as study clubs, professional subject societies, technical support groups and regular technical meetings among subject specialists. Despite these policy initiatives, the current PD programs have not provided teachers with appropriate development programs or helped teachers to implement new curriculum. The current PD programs are often run traditionally in workshops and they do not change teachers' behavior or students' learning outcomes (Hang Chuon, 2017). It is also found that the current PD programs are not providing

teachers with the knowledge and skill to teach in the classrooms. For this reason, teachers, especially those who were trained in the previous system, still have little mastery of the subjects they teach and lack the pedagogical skills to teach students, especially those in disadvantaged areas. Chhin and Tabata have argued that much of the training provided to primary school teachers does not have an impact on pupils' achievement (2003).

This paper presents the findings from research conducted by Education Research Council (ERC) team on teacher professional development programs at four different types of primary schools in Cambodia and explores an effective professional development model to improve the practices of teachers in primary schools. First, the framework for effective PD programs will be presented. Then, ongoing cases of PD programs at four different types of primary schools will be reviewed. Finally, the implications for policy are presented to policy-makers.

Towards a framework for an effective PD program

Professional development (PD) refers to a variety of educational experiences related to an individual's work and is designed to improve the practices and outcomes of the students (Patton, Parker, & Tannehill, 2015). To meet this aim, PD must be able to bring about changes in teachers' practices and in the classroom. Examining the contexts and the various models of INSET, the literature shows that an effective INSET encompasses six dimensions: (1) needs assessment; (2) organization; (3) determination of content; (4) training process; (5) follow up; and (6) evaluation (shown in Figure 1). Each dimension is underlined by the principle of adult learning. The conceptual framework of this research is adapted from the effective INSET strategies models of O'Sullivan (2001).

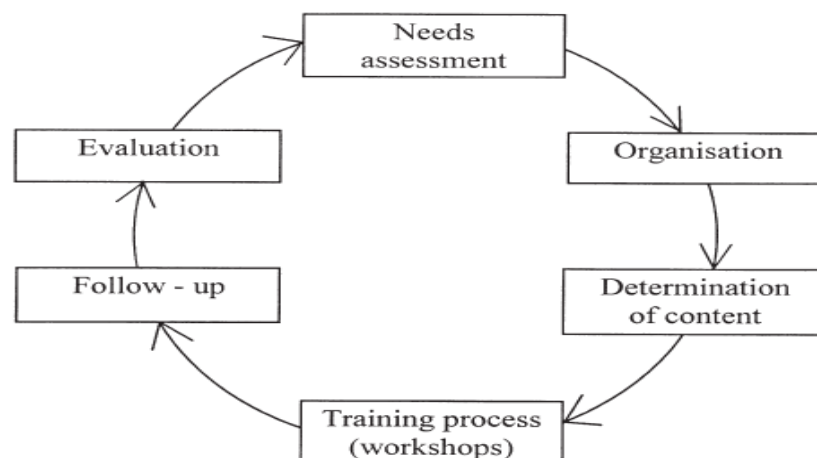


Figure 1: INSET Strategies Model for INSET programs (O'Sullivan, 2001, p. 3)

Adult learning takes place only when teachers can see the goal of what they do, when learning is focused on problems and not on content, when they bring significant knowledge to the learning process, when learning includes experiences that can upset old beliefs and generate meaningful change and when they develop a growing interest in a particular subject (Beavers, 2009). It is therefore important that these six dimensions of PD are underpinned by eight core features to allow teachers to develop as active learners who are able to improve learning of the students. The core features of PD proposed by Kevin & Deborah cited in Patton (Patton et al., 2015) comprise of:

- *Core Feature 1: PD is based on teachers' needs and interests.* A needs assessment should be conducted to identify teachers' most required training needs, taking into the account the issues faced by teachers and students. Only when PD addresses the needs of the teachers can it bring about the necessary knowledge, skills, values and belief to teachers. The content of the training should be prepared based on the needs assessment result.
- *Core Feature 2: PD acknowledges that learning is a social process.* Adult learning takes place when it builds the relationships among teachers rather than focusing on each isolated individual. Rather than being imposed with a formal structure or arrangement, PD should be organized in a way where teachers can work together.
- *Core Feature 3: PD includes collaborative opportunities within learning communities of educators.* Teachers learn from each other in the professional communities that exist beyond their classrooms and schools.
- *Core Feature 4: PD is ongoing and sustained.* Change in teacher practices and classrooms will not happened in a day. PD must be a continuous process that allows teachers' practices to change in the classroom and includes follow-up and bringing the experiences back for discussion and reflection in the learning group.
- *Core Feature 5: PD treats teachers as active learners.* Active learners learn through reflection, inquiry, appreciation and constructing their own meaning and understanding.

- *Core Feature 6: PD enhances teachers' pedagogical skills and content knowledge.* Teachers must be equipped with teaching method and knowledge for effective learning and teaching.
- *Core Feature 7: PD is facilitated with care.* Teachers needed to be heard rather than imposed upon, appreciated rather than blamed.
- *Core Feature 8: PD focuses on improving learning outcomes for students.* PD must improve students' achievements. PD must be designed to improve the students' learning outcomes in different contexts rather than place too much focus on new teaching methodologies.

Research methods

The study is conducted at five primary schools located in the Kampong Speu, Kampong Cham, Prey Veng, Siem Reap and Rattanakiri provinces. Among these five schools, there is one school whose teacher PD is supported by the non-government organization Save the Children. The below table shows the names, locations and socioeconomic status of the schools. The research fieldwork was carried out from June to August 2018. The data were collected through key informant interviews with officials from the teacher training department, provincial offices of education (POEs) and District offices of Education (DOEs); semi-structured interviews with school directors and deputy directors and focus group discussion with teachers.

Table 1: List of visited schools

Provinces	School name	Districts
Kampong Speu	Svay Char	Kong Pisei, Sdok, Sdok
Rattanakiri	Borey Kamkor Buon	Kachanh, Phum Buon
Prey Veng	Kampong Popil	Pea Reang
Kampong Cham	Angkor Ban	Kang Meas
Siem Reap	Chambak Hae	Pouk commune, Pouk district

The school directors and deputy school directors were invited for interviews to understand the PD available at their school, the role of school directors in supporting the teachers' PD at their schools and their experiences in leading and guiding the teachers' PD. In conducting the

interview, researchers used appreciative inquiry (AI) to understand the best practices of PD at school. Rather than asking, “What is going wrong?” the interviews were directed at finding out what is going well and the potential and the assets of the PD at each school. The interviews were in the form of constructionism, where meaning is constructed from participants’ experiences.

Teachers were interviewed as group about their experiences and perceptions of the PD available at their school, the enabling conditions for them to learn, the role of school directors and the outcome of PD on students’ learning outcomes.

Activities of technical meetings were observed in order to understand the process and the content of the PD and what approaches are effective.

Officials from teacher training department, primary education department, curriculum development department, provincial offices of education (PoE) and district offices of education (DoE) were interviewed to understand their role in providing PD, the modalities of PD, the PD materials and the support they give to the school though providing PD at school. More importantly, the interviews focused on the interaction between these actors in providing PD at school.

Policy documents, regulations, PD programs and PD materials are also examined to understand the content, complexity and relevance of PD to the teaching and learning in the classroom. The school’s documents are also examined, such as the school’s profile, development plan, documents related to PD from PoE, the school’s PD plan, reports of technical meetings, inspection report of District Training and Monitoring Team (DTMT) and any artifacts related to PD.

Case studies: Four PD models

From the research, four cases of PD will be presented in below sections. Each case has its own features, issues and advantages.

Teacher PD in cooperation schools provided by VVOB

Teacher PD in cooperation schools (*Sala Thnal*) is slightly different to regular schools. Cooperation schools are the selected schools where teacher trainees from teacher training centers do their practicum. Teachers in cooperation schools have more chances to receive PD than those in regular schools. This research studies the case of Veal Vong Primary School, which is one of the cooperation schools in the Kampong

Cham Provincial Teacher Training Center. Veal Vong Primary School's director stated that her school is a cooperation school, thus the school has received opportunities to be trained on all of the methods that have been applied in the provincial teacher training centers to ensure consistency between the teacher preparation program and real classrooms. For example, just prior to the interview taking place, the cooperation school had been provided training about the Inquiry-Based Learning approach every Thursday over an eight-week period by a provincial teacher training center's trainer.

Cooperation schools' teacher PD is usually provided by Flemish Association for Development Cooperation and Technical Assistance (VVOB) and uses the cascade model. The cascade approach transmits the knowledge or information from the top (from experts and specialists) to the lowest group of teachers (Ono & Ferreira, 2010), which is called "Training of Trainers" (ToTs). The training is conducted at several levels by trainers drawn from a level above. Using the cascade model, VVOB train the national core trainers (NCTs), who will in turn train the teacher trainers from 18 regional teacher training centers (RTTCs) and provincial teacher training centers and technical grade leaders (TGLs) and vice school principals in charge of teaching techniques from application and cooperation schools.

Before 2016, the teacher training department had sole authority to select the NCTs. VVOB simply requested the teacher training department to provide the names of NCTs to work with VVOB and the teacher training department could nominate anyone to be an NCT in their own network. So far, the NCTs often have been nominated among officials from teacher training department, primary education department, secondary education department or from PTTCs or RTTCs. The Teacher Training Department always nominated MoEYS officials who had never taught in the classroom and were not committed to fulfilling the requirement of the new jobs, so the participants complained about the quality of training. It is for this reason that since 2016 VVOB has been selecting the NCTs by themselves through a competitive process. The teacher training department simply facilitates the process, such as disclosing the information about the recruitment of NCTs. The selection is based on fair, transparent and competitive principles (i.e. submitting an application, compiling a shortlist and conducting interviews). The selected NCTs are diverse, including both officials from the central and national levels, like teacher training centers, and more qualified and committed than the previous NCTs.

NCTs are trained by the experts about thematic content of the trainings for “cascading” to the teachers. From 2016–2020, the training provided by VVOB focuses on mathematics, classroom management and leadership. The key focus of training is how to produce and use teaching aids in mathematics and the sciences rather than the content of the subjects. The training is also a form of learning. Often, the NCTs training covers the teaching method of mathematics and sciences and how to develop teaching aids. Materials development is provided by different stakeholders, such as experts, NCTs and teachers, who bring expertise from different perspectives and learn from each other throughout the process.

The advantage of the cascade model is that the approach can reach many participants in a short time and it is cost-effective. Although the cascade model is instrumental for upgrading the skills and knowledge of trainers, the model has a number of setbacks. The first setback is when the multiplication of the knowledge and skills to teachers after the ToT is not productive. Crucial information may be lost or misinterpreted at each step of the cascade process and those who receive the training may not relay the training to the next level. The second setback is that the model is more focused on skill and knowledge development than values in teaching and learning (Kennedy, 2005).

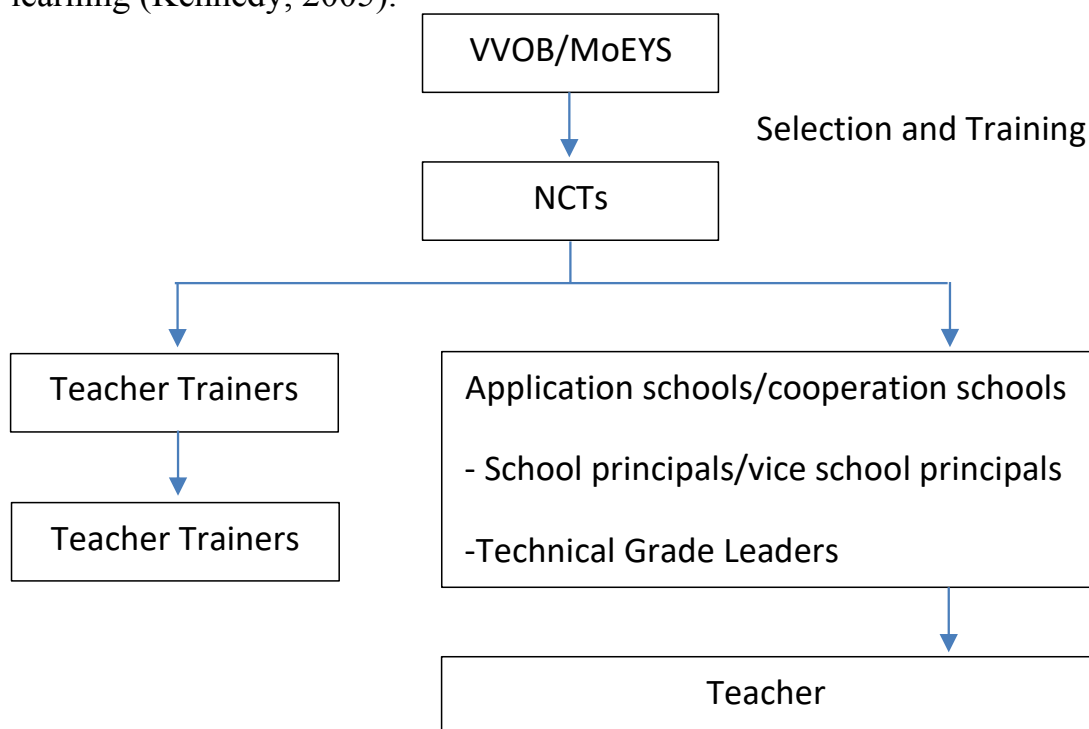


Figure 2: Cascade model of PD provided by VVOB

PD model at normal primary schools: Technical meetings (TMs)

The modalities of TMs

At school level, on-site PD is conducted under the form of technical meeting (TM), *Prochum Pachektes*. TMs occur at the school and cluster levels. The main objective of a TM is to provide regular PD and improve the relationships among the teachers. In the meeting, teachers are supposed to discuss any teaching issues, reflect on their teaching experiences and exchange ideas about teaching and learning. At the beginning of every academic year in October, the department of primary education of the MoEYS issues guidelines on each school's operation plan consisting of the regulations related to TMs, such as very brief information regarding the dates, the agenda of TMs and their incentives. These guidelines are then disseminated to PoE and DoE, who relay the information to primary schools. There are at least seven TMs to be conducted at each school per year and budget support is supplied by MoEYS.

Based on the timetable determined by the PoE, schools need to organize TMs on Thursdays at least seven times per year; however, the schools can hold them as often as twice a month. Teachers are offered 12,000 riels per TM they attend and a payment for refreshments is provided to the organizer. The purpose of a TM is to share ideas on teaching methods and content knowledge, including the best practices and difficulties in their teaching. In the TM, one teacher will teach, demonstrate or resolve educational issues to other teachers on a particular subject which is usually identified based on the class observation of the school director. During the TM, the school principal also shares relevant information, e.g., the guidelines from the national level.

TMs are also conducted at school cluster levels. The school cluster system was piloted in 1992 and then expanded to all provinces in 1995. Each school cluster is composed of five to six geographically proximal schools, of which one is a core school and the others are satellite schools. The cluster school system is a mechanism for coordinating central government support, strengthening school management, managing scarce school resources, increasing the capacity of local staff, and enhancing teaching and learning. The funds for school development are directly transferred to schools via clusters upon the submission of the cluster's plan to the MoEYS.

TMs always follow four main activities: 1) a teaching demonstration, 2) reflection and feedback, 3) policy dissemination, and 4) other issues related to teaching problems or student learning issues. The teaching demonstration is the core activity of the TM and the demonstration imitates teaching in a real class, with the teachers as the pupils and the demonstrating teacher playing the role of the teacher. Sometimes, real students attend the demonstrations. The demonstration takes 45 minutes. Demonstrations are an essential teaching method that can be used with both large and small groups to support teachers' skills at any grade. In the demonstration, teachers not only demonstrate learning concepts to other teachers, they also help to improve their own teaching strategies. In the class demonstration process, teachers always followed five steps: warming up the class, reviewing previous lessons, teaching new lessons, strengthening students' knowledge and providing homework. Teachers perceive these five steps as a student-centered approach to teaching. Further, recognizing that students face challenges with reading, writing and mathematics, the Khmer language and mathematics subjects were often selected for teaching demonstrations in TMs. After completing the class demonstration, teachers are allowed to provide comments, suggestions and evaluations to find strengths and weaknesses in the teaching process.

Some key issues of TM are as follows:

- **District Office of Education has very limited role in TM:** An DoE official said, "We come just to show our presence so that teachers and directors feel more warm support and if we have any new information we can disseminate it to them." A teacher said, "DOE sometimes gives feedback on wrong spellings, or to provide MOEYS guidelines or recommendations." DoE has very small technical and managerial roles in TMs.
- **There is no TM follow-up and monitoring:** Some teachers reported that after attending a TM they practice what they learned in the meeting and applied it to their students. They then reported their achievements in the next cluster meeting. E.g., a Deputy Director stated that, "A Grade 1 teacher had difficulty in classroom management, her students don't listen, so others give her suggestions that whenever they are noisy she should ask them to stand up and clap their hands, tell them stories or play some games, do anything that engages students." In the next meeting, she reported that the suggestions were effective. However, there

is no systematic follow-up on teachers to see if they have practiced what they learned in TMs.

Advantages of TMs are beneficial as below for teachers as following:

- Teachers can share and learn from each other about different teaching methods and apply these in classroom to suit their students' needs. A teacher said she shared the Early Grade Mathematics teaching method with other teachers in a cluster meeting. This method uses inquiry-based learning approach. She said, *"Some teachers did not see the advantages of the new method but when I explained it to them, they began to understand and think it is good. Technical meeting is a good chance for teachers who did not have chance to attend trainings to learn from others."* Some teachers mentioned how they got ideas from the cluster TMs and applied them in their own classroom. A teacher in grade 3 said she changed her methods of how she taught science, e.g., the subject related to foods. Instead of telling students the information, she posed questions to students to pique their curiosity. She asked, *"How many categories of food? Water lilies are in which food category?"* Before teaching, she copied color pictures and used real items (lily flowers) to show to students. She agreed that students learn better with teaching aids. Most teachers are happy to learn from peers and apply what they learn when they know the theories behind each method; e.g., IBL is designed to improve students' critical thinking and creativity.
- Teachers can also use TM demonstrations to strengthen their knowledge of how to produce effective lesson plans that are based on coherent steps and determine lesson objectives and how to achieve them. In addition to that, TMs act as a venue for teachers to come together and produce teaching aids or materials to help students better achieve learning objectives. Teachers can guide each other and exchange raw materials to produce teaching materials. One teacher said, *"Some teachers do not know how to use teaching aids or when to use them; some ended up not using them at all. Teaching with materials can engage students and make them happy in class. Students will not be absent often when they enjoy the class."*

- Teachers reported that their classroom management skills improved. They can learn from other teachers who are good at classroom management on how to deal with students who are misbehaving, loud, or disruptive during study time. They also learn how to motivate students in class and make learning fun as well as how to be a good teacher through observing the class demonstrations. Therefore, TMs are an important platform for teachers to share and exchange ideas and enhance their general pedagogical knowledge.

PD model at Angkor Ban Primary School, Kangmeas District, Kampong Cham Province

Angkor Ban Primary School consists of kindergarten and primary school levels. There are 11 classes and the average class size is 30. The school has 17 teachers, 13 of whom are female. The teacher capacity in the school varies. Most teachers are Cadre C official level which is the lowest level in Cambodian public function system and but only two are in Cadre B. Most of them are pursuing bachelor degree at the universities in the province. The school will launch a New Generation School (NGS) program in academic year 2018–2019, but at the time of fieldwork there were no teacher preparation programs for NGS.

The Angkor Ban Primary School has been supported by Save the Children for two development programs: the first one between 1998–2002, and second one was from August 2013 to now. The second project is called “I’m Learning.” Before selecting the school, they were going to support, Save the Children conducted three interviews with the schools and stakeholders.

The modalities of PD in Angkor Ban Primary Schools are:

- **Training:** To address the knowledge and skills gap of teachers and strengthen their capacity, teachers in Angkor Ban Primary School are provided with training on a regular basis. The school director claims that the NGO provides a lot of training every year, and all teachers are allowed to attend the training, including those teaching the kindergarten level. The training can take place either at school or at Kampong Cham PTTC and the trainers are from the PTTC. A training course lasts for two days per time and they are conducted a few times in the academic year. Teachers usually receive training on lesson planning, teaching methods, material creation, questioning methods and life skills.

- **Study visits:** Another form of PD in the school is study visits to other schools. The director mentioned these are eye-opening experiences for teachers and they can learn better by exposing them to the innovative environment directly. By joining study visits supported by Save the Children, teachers can learn from other schools' experiences and best practice. They can see other schools' improvement and teaching activities, then reflect and update their own knowledge. The study visit is two days in duration and is conducted twice a year at schools in the province or outside the province. All teachers have the opportunity to take part.
- **Exchange ideas/experience among all stakeholders:** Stakeholders in school include school leaders, teachers, students, parents and other members of the community. In addition to formal trainings and study visits, there are other dimensions that can influence teacher capacity that emerge from the relationship between teachers, teachers and parents, teachers and principals, and principals and the community. The director said, "*Save the Children, particularly this I'm Learning Project, helped our school to understand the key stakeholders' responsibilities to develop the school, especially the importance of community involvement. Before we didn't know that.*"
- **Follow-up after training:** Save the Children does follow-ups after each training session to see if the teachers have applied the knowledge learned. The director said that Save the Children follow up four times a year on average. They follow up either by conducting tests/assessments or classroom observations on teaching/learning activities to see the teaching methods used. The director reported that in the first year they followed up more often on every aspect, such as community involvement, school planning, school management and leadership and teacher capacity. However, in the last few years, they only follow up on subtle points such as teaching methods, teaching materials, questioning and classroom management.

After the follow-up, Save the Children reports the results to school management in the monthly meeting, in a meeting with all pilot schools, or at the Save the Children office. They provide feedback on the challenges and results, after which the school directors make plans and incorporate the feedback into school improvement plans or annual operational plan.

Mostly it is only the Save the Children that conducts the follow-ups, not the directors. The director said, *“We can’t follow up, we don’t have time, we have to do reports, budget and other subsector development, and also we don’t have experience.”*

- **Class observation:** The school director does not observe the classroom often but let the Save the Children fulfill this tasks. The school director said:

Our school used to have only seven classes and only one class per grade, thus teachers took classes and couldn’t be TGLs. School directors can’t observe classrooms often. We only collaborate with Save the Children and see the positive and weak points they report. We did some checking up to confirm if the conditions are like what reported and made plans to change shortly. If teachers don’t understand or can’t implement well, e.g., the new teaching methods that they have been taught, we help them direct or if there are more than 60% of teachers, we ask Save the Children to provide training to all.

- **Teacher evaluation:** A committee has been created to evaluate teachers to decide who to upgrade the salary scale every two years and solve other issues in school. The director said, *“Sometimes, PoE/DoE come and when we have not evaluated the teachers, they just ask us to give random names.”* PoE/DoE never come directly to overlook the committee. The committee mostly just has the name and director involves them to do tasks related to guiding teachers who lack discipline and are inactive (e.g., are they frequently late, absent or slow to submit tasks) and unable to keep up with others.

The school director reported that “the monitoring and evaluation of teachers and giving incentives to high performing teachers is the responsibility of PoE/DoE to evaluate and pick ‘good teachers,’ but they never come and inspect. In recent years, they come often because Save the Children are implementing the project and give a per diem to them to come”.

The school does not evaluate student or teacher performance. It is because there are assessments from Save the Children/ Kampuchea Action for Primary Education (KAPE) already for semester 1 and 2, and they have proper tools, standardized, and

expertise. The school only keeps record on passing rate, repetition rate, dropout rate for monthly and semester evaluations. The result of Save the Children's assessment is the formal result to show the stakeholders.

- **Project evaluation:** The 'I'm Learning' project seeks to provide concrete evidence that a holistic approach to school development can actually improve children's learning through implementing the quality learning environment framework (QLE). The QLE includes four dimensions: (1) Emotional and psychological protection, (2) physical protection, (3) student-centered teaching approach and active learning, (4) Parent-community participation

At the end of every academic year, KAPE conducted an annual project evaluation and providing recommendations for next year's implementation. The director said "It is good that Save the Children hire KAPE staff to evaluate their work and show the general results in public." After conducting a QLE assessment in each of the five intervention schools and every class, each school is evaluated and their results compared (e.g., each grade in all schools is compared).

The QLE assessment is conducted once a year and the results are displayed in general one-year achievement, especially on Khmer and mathematics. Schools can see other pilot schools' achievements and reflect. KAPE asked teachers to show commitment, and what plan they thought should be implemented next. They showed the results and discussed them; e.g., why the school received a particular result – was it due to a shortage of teachers (double shift), shortage of classrooms or having mostly contract teachers? Or is it that students come from other schools a lot and they have poor reading skills?

After one year of being part of the "I'm Learning" project, the first QLE result showed a high achievement in Khmer and low in mathematics. This was a wake-up call for the teachers. They reflected on their teaching methods and their weakness. The school leader raised a plan to Save the Children to train teachers, then the organization invited PTTC trainers specialized in particular areas to provide training, either inclusive training at the PTTC or school-based training. School-based training is

conducted if the problem is only at one school, while inclusive training is done if all intervention schools have the same problems. The training provided based on each grade.

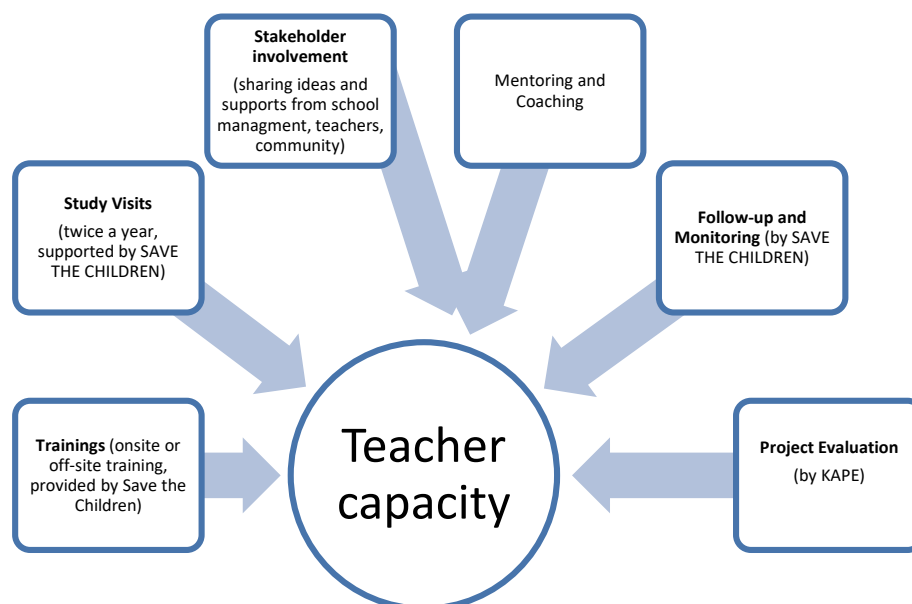


Figure 2: PD modality used in Angkor Ban Primary School supported by NGOs

Implication from Angkor Ban Primary School

The PD supported by Save the Children is more effective than other PDs because the training is provided to all of the teachers in the school and the schedule is flexible to the needs of teachers. One director said that "*previously Save the Children projects use the cascade model (ToT). E.g., if there is training on community, they select only the head of the school; for school management training they select only the director; for teacher training they select only TGLs. They don't have time to share, and teachers don't listen. He continued, "In our culture, teachers don't listen to those who are close to them"*. Save the Children invite all teachers from kindergarten to Grade 6 to take part in all training sessions; e.g., even though project standard reading is supposed to be only for Grade 3, the organization invited all teachers in the school to learn the new methods and make adjustments based on their grades." The trainings are mostly scheduled during vacations and study visits are held on weekends or holidays.

The community's participation: Strong community participation is one of the most important success factors of effective teaching/learning in Angkor Ban primary. The school director holds meetings with the community to establish a classroom committee in order to show the objectives of the school, how school should be running, and ask the community for help. The community can help with gathering school-aged children to enroll in the school. The school management can also show the school's improvement plan and ask for financial assistance in whatever form the community can contribute. The director said, "*we asked parents to have critical thinking and analyze the importance of their investment on their children, in opposed to other expenses.*" Teacher and parents also have the opportunity to meet up and talk about their child's study and the school's facilities. The director said, "*previously, the community didn't care about student attendance and the availability of infrastructure/facilities in the school, but then we invited parents to classrooms, so they can see how their children are taught*". Parents more freely give suggestions to schools on the academic improvement of their children. They have become more open to teachers and teachers can give feedback.

Angkor Ban School depends on NGO training, assessment and teacher capacity-building. The school lacks strong school leadership. The prominent form of PD is training and study visits. However, there seem to lack of focus on collaboration among teachers and among schools in the pilot projects. There is no form of collaboration between teachers, except a few sharing sessions in the monthly meeting, which is not flexibly scheduled. Teacher capacity-building agenda is not a priority. The director did not remember how many training opportunities had been provided to teachers and never assessed the teachers' performance. The school mostly focuses on training as the only crucial tool to build teacher capacity and provides few chances for teachers to reflect on their teaching practices with peers. An external change facilitator who can bridge the gap between new research/innovative methods and classroom practice is needed for PLC to take place and function well. In this example, Save the Children could have been the facilitator but they did not focus on peer collaboration.

Teacher PD at New Generation Schools

Upgrading schools to New Generation Schools (NGSs) is another step of the Child Friendly School (CFS) program to promote education in Cambodia. The Policy Guidelines for New Generation Schools (2016) policy provides guidance to educators and administrators at all levels

regarding the implementation of NGSs. The establishment of NGSs is an official policy goal of MoEYS. The establishment of NGSs is seen as a continuation of CFS developments. Such schools receive greater autonomy from the state to stimulate educational innovation. With this type of school, MoEYS intends to create a new development track within the public education system that will lead to the creation of autonomous public schools, which receive high investment linked to new standards of accountability and governance as well as teaching the professional standards required for 21st century learning.

The vision of NGSs is that they will lead to the emergence of a new administrative framework that ensures the necessary conditions needed for successful educational investment through the creation of autonomous public schools governed by strict rule if accountability. The concept of NGS is similar to charter school in other countries, where the school is a public school but the management, learning, teaching and financing are different from public schools. The NGS has separate policy to run endorsed by MoEYS in 2016. Currently, there are 10 NGS in Cambodia. While the staff and funding are provided by the government, Kampuchea Action for Primary Education (KAPE) provides day-to-day support in collaboration with school's vice-principal and/or principal.

The NGS employs teachers who are either current government officials or recent graduates from university. The teachers go through a rigorous employment process including screening applications and taking a teaching test and oral interview. If successful, the candidate goes through intensive capacity-building before becoming a teacher at an NGS.

The quality of NGS teachers is shaped by four major factors (as shown in Figure 4): intensive training for two weeks by KAPE resources employees, a continuous professional development plan (PD) developed by the teacher, mentoring and coaching (senior lectures), and being part of a professional learning community (PLC).



Figure 4: PD modality used in New Generation Schools

The two-week intensive training is designed to equip teachers with teaching methods, leadership, and some other critical skills so that teachers are ready to teach in an NGS.

The PD plan is developed by the teacher. Normally, an NGS requires each teacher to conduct a self-evaluation. Using the results from this evaluation, the teacher notes self-improvement areas, e.g., content knowledge and/or teaching methods. KAPE responds to the needs of each teacher through one-on-one coaching and/or group seminars.

Mentoring and coaching are the activities utilized to improve the quality of teachers when the self-evaluation is not enough. A mentor visits the classroom while the teacher is teaching. This makes the teacher highly accountable. If there are any shortcomings identified by the mentor, s/he will make recommendations for improvement.

The PLC is also plays a very significant role in promoting teaching and learning in NGS. PLC is the advanced version of the lesson study and/or class demonstrations used by other teachers. PLC requires teachers collect information on each student, especially their learning goal(s), and tries to prepare a teaching plans that meets those goals. The group of teachers from the same discipline at the school will study the students' needs and then prepare a teaching plan (DuFour & Eaker, 2009). Teachers will exchange ideas and the progress of their students' achievement. In some cases, parents were invited to the school to discuss their child's study goal and invited to participate in the teaching activities to ensure the goals

materialize. It should be noted that while lesson study and/or class demonstrations are focused on teacher learning, PLC is focused on student benefits.

In short, the success of PD in NGS is associated with two external factors and two internal factors. The external factors are that all teachers are being watched, either through their self-evaluation or through mentoring systems. The mentoring and evaluation work as the driving force for teachers to ensure that they perform well. Another external factor is that they are highly valued by students and parents. The engagement of students at school and the study results have promoted the value of teachers and means they are appreciated by parents. During school visits by parents, teachers have a feeling of connection with the community. For the internal factors, the teacher has career path, meaning that if they perform well, there will be incentives such as becoming a mentor and/or involved with other activities to promote teaching and learning in NGS.

Finally, teachers at NGSs are always updating and upgrading their capacity due to their community and/or school environment. Like-minded teachers are working in NGSs, which means that they reinforce each other in promoting a learning environment.

The INSET model conducted in NGSs has some implications for general public schools, mainly in relation to the PLC and mentoring systems. The NGS model can be repeated in general public schools if teacher career pathways are implemented with high-quality assessments of teacher's performance.

Discussions

This study has found different models of teacher PD, each of which was designed to meet the needs of each setting. Each case has generated different results and also has its own weaknesses and constraints. Although we have not deeply explored the effectiveness of teacher PD of the four case studies, especially the linkage of each model to the student achievement, observations can be made based on the above cases. To maximize the outcomes from PD, the policy-makers and PD program developers need to change the current PD approaches and practices. Learning from the four cases, there are some recommendations to be made.

Design the PD with clear PD objectives

The goals of PD as well as the school's conditions and constraints determine which model of PD is the most suitable for a given setting and

school. There is a need to identify which teacher competencies and practices need to improve within the framework of teacher professional standards. Each type of competency and practice requires either a different approach or a mixed approach; e.g., the cascade training model provided by VVOB focuses on science and mathematics in terms of producing and using practical and simple material in the teaching and learning of science and mathematics. However, the cascade model often emphasizes content knowledge rather than the value and the attitude of teachers.

The objectives of teacher PD must be linked to the students' learning outcomes. The learning outcome is improved if only the teacher's PD brings about change to the teachers and thus the practices in the classroom. It is important that needs assessments are done to assess teachers' training needs. From there, the content of the training must be prepared. For instance, the content of the training for unqualified teachers must not be complex and beyond the teacher's capacity, otherwise it is unlikely to be implemented in the classroom.

The needs assessment will make PD feasible and improve the implementation of PD in the classroom. However, the study found that in general needs assessments are either not conducted properly or not by the PD providers and the normal schools. In the four types of schools visited, the school supported by Save the Children and the NGS conduct the needs assessments before providing the training to teachers. The needs assessments in these schools is conducted in a form of an evaluation early in the academic year.

Fostering coherence of the content and the process of teacher PD

A PD activity is more likely to be effective in improving teachers' knowledge and skills if it forms a coherent part of a wider set of opportunities providing teacher learning and development. In this sense, teachers shall be guided about what to teach and how to teach from different sources such as pre-service education, in-service education, textbooks, teacher professional standards in the national curriculum framework and assessment. These sources must be coherent so that they can improve teaching practice.

Teacher PD is coherent if it builds on what teachers have already learned, the content and pedagogical knowledge is aligned with national standards and assessments and it creates professional communication with other teachers who are of the same status (Abbott & Snidal, 1998). The

PD of the school supported by Save the Children follows this pattern. The teacher PD in this school uses mentoring and coaching by facilitators (the staff from Save the Children) on one particular subject at a time and then the next session is connected to the previous session. Teachers are mentored and coached based on the concept of appreciative inquiry and active learning (i.e. positive practices and positive situations of teachers) in teaching and learning. The PD in this school is aligned with the test standard results. The test standard is designed based on the curriculum detail and textbooks. The test results are used to design the content of the PD.

PD must encourage the development of a collegial network among teachers who are engaged in similar ways of teaching. An ongoing discussion among teachers who confront similar issues can facilitate change by encouraging the sharing of solutions to problems. By sharing methods, discussing written work, and reflecting on problems and solutions, teachers may foster a better understanding of the goals of student learning that bring about change in teaching. Technical meetings in normal schools are aligned with this track and, if it is properly conducted, it will contribute to the students' learning outcomes.

Coherence of all actors involved in PD

There is a need for the technical departments of MoEYS to work together in a coherent way from the planning to the implementation of PD programs. The PoE should be more involved in training rather than administrative tasks. With support from MoEYS and PoE, a mechanism for supporting, implementing and monitoring PD should be created. The mechanism should allow PoE to be actively involved in training, funding, data-collection and analysis to ensure the alignment between its inspectors, DTMTs, clusters, teacher training centers and schools.

At the district level, the regular meeting between DoE and schools could be a vehicle for INSET expansion as well as exchanging best practices from one school to another. We have identified different INSET models being practiced in Cambodia. Each model has its strengths and weaknesses depending on the school context. Therefore, when school principals meet each other face-to-face on in their monthly meeting, they should discuss and learned from each other. This meeting could also be a platform to update all schools on the progress of PLC and/or other INSET models being used at schools with district DTMT officials. If this is done, it is very likely that the culture of INSET at school would be amplified. It

should be noted that each school principal has different capacity to activate INSET at their school. The exchange of best practices of INSET at school during the meeting could be a major venue for them to take away and implement in their own schools. A unit whose role is to monitor and train DTMTs should be created to provide more systematic capacity-building to DTMTs with regards the PD principles, practices, PD needs assessments and monitoring and evaluation.

School leadership and PD

School directors play an important role in facilitating teachers' professional and personal growth responding to their needs and learners' needs. School directors are role models for their staff when they engage in PD. However, they also need to be trained to acquire new knowledge and skills to lead teacher development activities.

Organization of PD

Normal schools are obliged to hold technical meetings only once a month and for only seven months in the year. If schools only meet this minimum requirement, teachers will not be able to learn effectively. There should be a regular technical meeting with class demonstrations every fortnight so that it becomes easier to upgrade teacher capacity. It should be noted that if PD is conducted outside the school cluster, it is highly unlikely that teachers will attend. The major reasons for this is that every teacher is very busy with 1) teaching duties at the public school, 2) providing services as a private tutor and/or teaching in private school, and 3) taking care of their family. They also may not prioritize PD if it is not school based. One way to address this issue would be the provision of PD at service providers close to their schools, such as at RTTCs or TECs.

Evaluation

One of the significant weakness of INSET training observed in this study is the lack of follow-up and support when teachers come to implement the new ideas/methods in their own classrooms; that is, to translate professional learning into practice. Therefore, follow-up and evaluation should be mandatory.

The follow-up school visits at the end of the trainings or TMs enabled a useful evaluation of the training and highlighted other training needs, as in the case of Angkor Ban Primary School. The use of lesson observations within the follow-up and needs assessment and evaluation stages were crucial. These observations provided invaluable support to the teachers,

highlighting their needs, and enabled an assessment of implementation that was not accessible using any other methods.

Impacts of PD on teachers

Effective teacher PD leads to changes in classroom practice and ultimately improves students' learning outcomes. In the primary school context, it is particularly important to improve students' literacy and numeracy. After engaging in various forms of PD, teachers could identify positives changes in their classroom; e.g., being more student-centered and including more activity-based lessons in the classroom. A teacher reported that after students have completed all the games in mathematics class they learn more and they are excited to know more about mathematics. This method of teaching is more fun and less boring for the students. They are better engaged and developed more positive attitudes towards their learning.

Recommendations and Conclusion

Learning from the four PD cases, there are some recommendations to be made. These are outlined in the following sub-sections.

PD needs assessments

To be effective, PD must address the needs of teachers and students. The decisions regarding PD at school should be made after genuine consultation with teachers and school directors. The mechanism should be the school director or the school principals in the cluster school conduct a needs assessment of teachers and create a handbook of skills, content knowledge and pedagogical knowledge so that the schools can arrange the training by either using their school resources and/or inviting ToT from DTMT, PoE, TEC and/or TTD. School directors and teachers should be trained and empowered to assess the specific needs of teachers and school.

Mixing modes of the teacher PD

Choosing the locus of intervention and the proper mode for PD depends on the objectives of the program and at the context of given schools. Mixing the four models (cascading model, TMs, mentoring and coaching and PLC) in a coherent way can work well given the current context of weak school governance. According to the practices in most countries in the world, the most effective method of PD combines on and off-site activity and self-development with external assistance. To form a

coherent PD program from the four models, each PD model should be fixed.

It is recognized that the TM is one form of a well-established PD at the school and cluster levels. To make it function better, some rules and practices should be put in place such as strict attendance, meaningful discussion during feedback sessions, imposing questions or problems for teachers to work and research on by using data in their own schools to solve particular problems and good facilitative skills for school principals and TGLs. More importantly, as teaching demonstrations in technical meetings focus on the mastery of topics, a more effective way is to arrange as lesson study.

Lesson study has long been used as form of PD activity in Japan and is increasingly used in the United States and other countries. Lesson study is a type of classroom research in which a few teachers investigate teaching and learning in the context of an actual single class lesson. After each lesson study session, teachers document their work in a report that describes the lesson they designed, explains how the lesson worked and what they have learnt about teaching and learning from the lesson study experience. The lesson study is characterized as collective learning that is classroom-situated, context-based, learner-focused, improvement-oriented and teacher-owned. These features of lesson study match the elements or principles of an effective PD.

There is a need to scale up the practices of coaching and mentoring. The role of the TGL in providing support to novice teachers and making use of expertise from TEC trainers should be reinforced. Teachers with more expertise should mentor those with less expertise. This will link to the implementation of the teacher career pathway framework. The highest levels with the teacher pathways can serve as a core group of experts who will develop the PD for all teachers.

TEC as PD service providers

In order to ensure the effective and efficient operation and management of in-service training programs, MoEYS should consider providing autonomy to the two TECs and other PTTCs and RTTCs that will upgrade themselves to TECs after 2020 based on the Teacher Education Provider Standards in making decisions on all aspects of managing the teacher education programs as a regular higher education institution. MoEYS at the central level should only regulate, monitor and evaluate the programs to make sure that TECs will always produce

accountable results that comply with the regulations and standards stipulated by national policy. The autonomy granted to TECs with full financial and professional support will allow TECs to attract and retain the brightest candidates in teacher education, as stipulated in the teaching policy documents. TECs and schools are the closest in operation and management; therefore, they can learn and support one other.

TECs should provide a number of PD courses that address the specific needs of teachers, learners and the schools based on a needs assessment. PD policy states that teachers can have at least 100 hours of PD per year supported by the state. The teachers can register for the PD courses at TECs.

Creation of a professional learning community

Providing teacher PD in the form of a “community of learning” is another option. In a community of learning, teachers can identify their needs, the community’s needs, do the planning and implementation, support and assess each other, and provide feedback. Through this process, the teachers bring the real-life experience to the learning in the classroom and improve the learning outcomes of the student. The learning community improves not only the content and pedagogical knowledge of teachers but also fosters team-building and the sharing of knowledge and common values in their work lives.

Learning communities of teachers can take various forms, such as teacher groups for similar subject areas and teachers across subject areas learning with and from each other as communities of learners. MoEYS needs to provide supports to schools in the implementation of communities of teachers.

PD linked to career growth and incentives

As MoEYS considers changing its approach to PD, teacher pathways for career advancement and recognition play important role in this change process. Improving the conditions teachers work under and knowing that their PD engagement is related to their career success will have a great impact on their levels of PD engagement. The PD program needs to be developed in accordance with each teacher’s career structure. The TCP framework was adopted but there is no clear guideline on the implementation of TCP. TCPs are interlinked with their remuneration and benefits. The career and proficiency level achieved according to the TCP will have a direct impact on the income of teachers.

The implementation of TCP will require the creation of a service record for teachers (a career passport) that centers on a professional credit system including confirmed information about PD engagement and other professional achievements. Teachers will have their individual records and can be awarded with the appropriate career level.

Upon review of the concept and practice of effective PD for teachers, it is suggested that policy-makers, practitioners and academics know what constitutes a good PD program. Nevertheless, the issue of how to effectively implement PD remains a significant challenge. To begin to address this question, four PD cases are presented and analyzed. The cases show that firstly, the right approach to PD depends on meeting local needs and conditions and the objectives of the PD program. Secondly, to maximize the outcomes from PD, policy-makers and PD program developers need to change the current PD approaches and practices. Rather than only using dissemination or the cascade approach, PD should be conducted at the school level under various format as a social process and in coherent and sustained ways that transform teachers into active learners and bring about both professional and personal growth. School and cluster-based PD is the prominent model used for primary school teachers in Cambodia but as primary schools in Cambodia have weak governance, this is often not effective. The mixing of PD modes may be an effective solution to that problem. Lastly, linking PD to career growth and incentives under the teacher career pathways framework is a driving factor for teachers to develop their professional capacity. This is important as PD will not only improve student learning outcomes but also the teachers' professional and personal growth.

Annex 1: Comparison of PD paradigms in the four studied schools

	Cascade model	Coaching and mentoring	Demonstration class in normal schools through cluster system	Professional learning community
Objective	Transferring new knowledge, skills Knowledge or skill-based	<ul style="list-style-type: none"> - Induction of new teacher - Strengthen practices of experienced teachers 	<ul style="list-style-type: none"> - Exchange ideas/practices/resource among schools in cluster 	<ul style="list-style-type: none"> - Creation of new knowledge - Exchange ideas and practice within school - Solving school/ classroom problems by conducting action research

Sustainability	One-shot workshop approaches	<ul style="list-style-type: none"> - Sustained and extensive opportunities to develop practices - Depends on the one-to-one relationship between two teachers 	Properly run, sustained and extensive opportunities to develop practices.	Sustained and extensive opportunities to develop practices
Content	Teachers are trained to follow patterns. Focus on coherence and standardization	<p>Teachers are trained to be empowered professional.</p> <ul style="list-style-type: none"> - Social and cultural norms within institution - Interrogation of practices 	Teachers are trained to follow patterns. The content is too routine.	Teachers are trained to be empowered professional.
Venue	Offsite	Within school	Cluster level	Within school

Organization of PD	Once a year on average	Regularly	Once a month	Weekly
Type of learning	Results in passive learning	Results in active and participatory learning.	Results in passive learning	Results in active if continuously questioning and reflecting practices; engaging in action research
Power	Centralized workshops or programs	School-based model in which all teachers participate	School-based model in which all teachers participate	Depending on the role played by the individual as a member of the wider team, could be either a positive and proactive or a passive experience.
Delivery	Expert driven	One-to-one relationship Teacher facilitated	Teacher facilitated	Subject-based or level based or cross-disciplinary teachers (more than two people per group). Generate school-based research, shifting balance of power towards teachers themselves. Teacher facilitated

Relevance & Responsiveness	Programs do not address the needs of teachers and schools. Lack of connection to classroom context.	Program address the need of teachers and schools	The content rarely discusses on classroom issues.	Carry out collaborative action-based research, the problem of relevance will be addressed.
Evaluation	Program evaluation (survey)	Self-evaluation; mentor evaluation	None	Self-evaluation and peer evaluation
Impact	Improve content knowledge/ pedagogical content knowledge	Improve self-reflection and practices	Improve pedagogical knowledge	Improve critical thinking, questioning, reflection, communication, change classroom practices

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