

Monitoring and Evaluating the Professional Learning Communities' Project in Northeastern Thailand

Chowwalit Chookhampaeng^{1*}, Sumalee Chookhampaeng², ¹Department of Curriculum and Instruction, Faculty of Education, Mahasarakham University, Mahasarakham 44000 Thailand, ²Department of Biology, Faculty of Science, Mahasarakham University, Maha sarakham 44000 Thailand; * Corresponding author: e-mail: choochowwalit@hotmail.com; Tel: +66 971979959

This study aims to monitor and evaluate the successful factors of projects that develop the professional learning communities of professional educational staff. The staff studied in this research were financially supported by the Teachers Council of Thailand (TCT) in the Northeastern region during 2017. The factors of projects being evaluated included: inputs, processes, products, problems and obstacles, and successes. The target group included 143 educational professionals, and 11 project staff members. There were 11 projects, and the research was undertaken using a documented study and small group discussions. The interview instrument was checked for validity by the committee. The data were statistically analysed to find the significance by using frequency, percentage, and content analysis. The results showed that financial readiness and material and supply aspects, such as information communication technology (ICT), were important factors for the project success. In addition, the readiness in human resources, especially in their knowledge and attitude, was also important. Two out of eleven projects were unsuccessful in the processing factor. The problem occurring in the projects was that the participants lacked the ICT skills which were needed for the report of the projects. In terms of the output aspect, the projects developed the participants' problem-solving skills. The students' desirable characteristics could not be evidently evaluated. The projects' major problems and obstacles included the participants' negative attitudes, ICT skills, and the lengths of the projects which were too short. However, the projects could be more successful if they were well supported by administrators and strong teamwork.

Keywords: *Project monitoring and evaluation, Professional learning communities, Educational staff, Teachers council of Thailand (TCT).*

Introduction

The Thai Government's new initiative to introduce the professional learning community (PLC) model to Thai teachers' education was a reform initiative. It was later adopted in the education sector, as educators believed that learning culture in school plays a pivotal role in determining the teachers' success, while at the same time, ensuring better student outcomes [6] (Amornvuthivorn, 2018). A PLC creates a community of like-minded professionals, who can help each other by commenting on, and critiquing each other's practices, and by collaborating to improve their practices, in order to solve common problems. The teachers become aware that it is not the curriculum they cover that matters the most, it is how much their students learn. This approach has a profound impact on teaching and learning because it shifts the focus from teachers to learners (Bangkok Post, 2018).

The Teachers Professional Development Institute (TPDI) of Thailand

In the context of Thailand, the *Teachers Professional Development Institute (TPDI)* has introduced this concept to Thai teachers with an incentive, which links promotion to participation in the PLC. The teachers who attend 50 or more hours of PLC meetings for five consecutive years can submit a portfolio to the Ministry of Education, which reflects student learning, to obtain an upgrade of their teaching credentials. There are different ways to engage in a PLC. For example, using the *Open Classroom* approach to engage teachers in a discussion on students' learning outcomes. Teachers set the improvement focus, plan the lesson together, and visit each other's classrooms. After the observations, they reflect on how students are learning about the concepts, in order to adjust their lessons for continuous instructional improvement. This allows them to focus their attention on student responses, and how they can revise their lessons to best enhance student learning (Amornvuthivorn, 2018).

Literature Review

Professional Learning Communities

Introducing the PLC model is not only good for teachers, as it also helps solve the many structural problems which exist in Thai education.

Firstly, the PLC concept shifts the centre of gravity from centralisation to decentralisation. The PLC model allows teachers to discuss topics they are most concerned about and take initiatives towards improving their practice.

The second benefit is that it reinforces the concept of teamwork, collaboration, and shared responsibility. Teachers develop professional learning communities that acquire expertise, just as many other professional groups do, such as medical doctors, and engineers.

Thirdly, the PLC can help address the problems of small schools in Thailand. In more than 15,000 small schools, where some teachers are not strong in content or pedagogical knowledge,

teachers from different schools, in the same area, can visit each other and provide professional support to improve the quality of instruction in their classrooms.

Finally, the PLC model concentrates on learners. The process of upgrading teachers' credentials has often focused on teachers' training experiences or on the submission of written papers, which are often disconnected with improving student learning.

Although the PLC model holds the promise of many positive outcomes, implementing it is not going to be easy, as teachers have been working independently for so long. Questions, such as how often should teachers meet, and how best to implement the PLC approach, also need to be addressed. Further studies are required to determine the kinds of conditions that are most conducive for the implementation of the PLC model. Moreover, principal training on how to support this, is required to ensure smooth implementation and organisational support (Bangkokpost/opinion.com).

The Monitoring and Evaluation (M&E) Approach

Monitoring and evaluation (M&E) is a process that helps improve performance and achieve results. Its goal is to improve the current and future management of outputs, outcomes, and impacts. It is mainly used to assess the performance of projects, institutions, and programs set up by governments, international organisations, and non-government organisations (NGOs). It establishes links between the past, present, and future actions (United Nations Development Program Evaluation Office, 2002). Good planning combined with effective monitoring and evaluation can play a major role in enhancing the effectiveness of development programs and projects (United Nations Development Program, 2009). In this research, the study focusses on the monitoring and evaluation projects of PLCs in the Northeastern region of Thailand. Its purpose is to construct and evaluate a PLC of educational professional staff, after receiving budget funding from the Teachers Council of Thailand (TCT) during the 2017 budget year.

The Model of Teachers' Professional Learning Community

The model of the teachers' PLC for the non-formal, and informal education centre in Thailand's upper northern region (Kham-o-part et al., 2017) was developed to investigate the states, problems, needs, and factors that enhance the success of the PLC model. Furthermore, to also develop the teachers' professional learning community model (TPLC model) for the non-formal education in Thailand's districts of the upper northern region. It has found that the TPLC model for the non-formal, and informal educational centres consisted of four important components: shared values and vision, collaboration teamwork, continuous learning and professional development, and common good practice. Moreover, also obtaining higher results in the three aspects of the state of the TPLC in the non-formal, and informal educational center; the TPLC comprehensive test; and the participants' satisfaction, which showed after the implementation of the TPLC model, and at a significance level of <0.05 .

The problems mentioned above lead to the concept of the learning pathway, and professional educational staff. It focused on participatory learning which was based upon in-school authentic work, rather than non-authentic work. This concept was agreeable with the PLC principle, which aims to evolve an educational institution into a PLC. Accordingly, the researcher aimed to design a PLC model for teachers by using the budget from the TCT and the informal educational centres in Thailand's upper northern region, which would convert the existing environment into a true PLC for teachers.

The Context of this Research

The PLC comprised the teachers' cooperation for their instructional changes, as an initiative of educational reform, occurring from the smallest classroom which focused on the students. The teachers had to act by themselves, as well as shared their learning together. They were focused on interaction, and this decreased the teachers' loneliness in school, and enhanced their work towards improving their students' learning achievements. This cooperation positioned the teachers as co-leaders. The opportunity was provided for teachers to change, to view the value, vision, and learning, and to apply what they had learned creatively together. This kind of collaboration was a moving force based upon the members' needs and interests. Besides, the quality change in knowledge management is a major point, which started by 'teachers' learning', as the initiated learning to view the improvement, change, and development of their own knowledge management for students.

There were three principles of major philosophy in developing a PLC in schools. Firstly, the opened common area was an open classroom for every teacher to be informed, and it belonged to everyone as a place to learn. Secondly, when the schools encountered any kinds of student problems or conditions, they would be able to effectively cope with those problems or obstacles. This can be achieved by studying the classroom together. Thirdly, the Teachers Council of Thailand was an office for the teachers' professional development. This included the important aim to promote the teachers' professional standard, and guidelines for leading the PLC in promoting and developing by providing the opportunity for educational staff to apply for funding.

Included in this project was the community development for shared learning; the common goal was the students' learning; the community members' cooperation and energy collaboration in cooperative planning, observing, practicing, and learning; and the openness for recommendations in teaching.

In the 2017 budget year, the Teachers Council of Thailand supported the budget for promoting the professional development activities by using guidelines of the PLC for 40 projects. The projects were classified into three levels, including the project of the educational professional level, the educational unit level, and the teachers' professional member group level. They were spread across the different regions of Thailand.

The researcher was involved in a committee for evaluating and following up the project and taking care in the Northeastern region, where it was implemented. The evaluation and following up included a total of 11 projects, which was comprised of nine projects at the educational professional level, and two projects in the educational institution level. In order to study and evaluate each aspect of the project, as well as the problems and obstacles, success factors were implemented. Furthermore, the PLC, in the real context, was developed in order to be informed about making decisions in the project administration, as well as recommending its application for the teachers' professional development.

Research Objective

The research objective is to monitor and evaluate the project for constructing a PLC in the Northeastern region relating to the factors of input, process, product, opportunity, threat, and success. It is also important to note that this project received funding from the Teachers Council of Thailand, in the 2017 budget year.

Materials and Methods

This study used a qualitative research approach, which is research that does not involve numbers or numerical data. A qualitative analysis results in rich data, which provides an in-depth picture. This form of research is particularly useful for exploring how, and why things have happened. The methods used may include interviews, which may be structured, semi-structured or unstructured; focus groups, which involve multiple participants discussing an issue; 'postcards' or small-scale written questionnaires that ask several focussed questions of participants but allow them the space to respond in their own words; secondary data, including diaries, written accounts of past events, and company reports; and observations, which may be on site or under 'laboratory conditions'. For example, where participants are asked to role-play a situation to show what they might do in a given scenario.

Some phenomena lend themselves to quantitative analysis because they are already available as numbers. Such examples include changes in achievement at various stages of education or the increase in the number of senior managers holding management degrees. However, even phenomena that are not obviously numerical in nature can be examined using quantitative methods.

Sample and Data Collection

The target group consisted of the educational and project staff who received funding towards 11 projects in the Northeastern region, which was comprised of nine projects at an educational profession level, and two projects at the school level. There were 12 persons in each project.

Research Instruments

1. **Report document:** a document which comprised the issues of the board of evaluation, and the following-up agenda of the Teachers Council of Thailand, such as the project goal, data of project members, project implementation, and project output.

2. **Small group discussion:** the discussion issues were considered by the board of evaluation and through the following up actions of the Teachers Council of Thailand. The discussion included covering the situation, the problem and obstacles in implementation, and the success factors in implementation.

3. **In-depth interview:** the discussion issues were considered by boards of evaluation and following up of The Teachers Council of Thailand. The major issues were the situation, problems, and obstacles in implementation, the success factors of implementation, and the recommendations from the project head.

Research Procedure

1. The conference was held for determining the framework of project evaluation during June 2017.

2. The evaluative research instruments were developed and considered by the board of evaluation and were followed up by the Teachers Council of Thailand, in July 2017.

3. The following-up team went to the area for evaluating and following up in the Northeastern region during August to October, 2017. The projects are as follows:

3.1 The project of model development for learning activity management in Astronomy based on STEM education for the learning skill in twenty-first century and creating the learning inspiration in Astronomy in Yasothon Province

3.2 The project of creating civil unity by using learning media from a locality in Si Saket Province

3.3 The project of skill practice for teachers in using the 3-dimensional model map to develop the students' learning process in Nakhon Panom Province

3.4 The development project for English Language Skills for Communication in Sakon Nakhon Province

3.5 The development project of the Nong No Prachasan School to be a professional learning community focusing on student-centred learning in Khon Kaen Province

3.6 The development project of project-based instructional network by using online social media for developing analytical thinking in Khon Kaen Province

3.7 The development project of professional learning community by using SPDC A Model in Buriram Province

3.8 The promotion project of energy enhancement in learning community for educational quality development in Nakhon Ratchasima Province

3.9 The project of teacher empowerment for improving student quality in Udon Thani Province

3.10 The project of a model school in skill knowledge management in the 21st century through PLC in Nong Khai Province

3.11 The project of teacher and educational staff development in knowledge management: growing rice sprouts by using the ethical project-based learning in Udon Thani Province

Data Analysis

The quantitative data was statistically analysed using frequency, and percentage modelling, and the qualitative data was analysed using content analysis.

Research findings

It was found that a total of 11 projects could be classified into two levels: nine projects at the educational profession level, and two projects of an educational work unit level. The classified original affiliation included two projects of a school level, which were under the jurisdiction of the Primary Educational Area office; seven projects which were under the jurisdiction of the Secondary Educational Area office; and two projects which were under the jurisdiction of the Local Administrative Organization. On the professional staff level, one project was the responsibility of the school administrators, and two projects were the responsibility of the educational supervisors.

The Project Objectives

Most of the projects focused on the development of a PLC for teachers' learning and teaching in four aspects: 1) encompassing learning and teaching based on STEM Education, 2) project-based teaching, 3) learning management which is student-centred, and 4) media construction. Unfortunately the rest of the projects lacked a definite goal. For instance, only the student quality or educational quality was specified. For the school readiness, it was found that a majority of nine projects (81.81 per cent) were within schools offering a secondary educational level. In the case of primary schools, there were large-sized schools or many schools which were combined together.

Input Factor

This project was ready in financial and material aspects. Most schools were large-sized schools, which had sufficient material and supply. However, the project members lacked comprehension in the major principles of the work implementation framework, which provided an unclear viewpoint of the cycle. The other projects were found to be lacking in good communication with their processes. The follow-up activities in some projects were unable to be completely conducted. In addition, some projects did not have clear PLC schedule system.

The Process of Implementation

There were situations and problems in the implementation processes that were assessed by using ICT. As for the members' participation, they were evaluated and followed up based upon their skills in ICT. In addition, there were no academic leaders. Consequently, there were problems, as well as recognition, in activity implementation. Furthermore, the following up was undertaken in activity evaluation during the second semester, as there were various activities in many schools, and they could not implement them according to the schedule. The other nine projects were presented through a video clip, as well as a supplementary document in the conference and small group discussion.

The Project Outcomes

Most of the projects had precise outcomes, the participants improved their problem-solving skills. Moreover the project promoted media and lesson development for them. However, in relation to the students' desirable characteristics, there was no sufficient or precise evidence to prove that the goal was accomplished.

The Major Problems of the Projects

The major problems were the members' attitude, the attitude towards ICT, and the insufficient project duration with the product. Moreover, the goal was imprecise or too broad; the implementation of the PLC would not be successful.

The Project Success

The projects relied on strong academic leaders and the administrators' support, who informally shared their values, and strong teamwork. The project heads were teachers leading activities for developing informal shared value. They would consider the members as co-leaders to develop the professional development activities until the goals were accomplished. They had to be supported by the administrators. See table 1 for further information.

Table 1. Average means, Standard deviation, α -Reliability, and F-test for the QEI

Scale	Mean	S.D.	α -Reliability	F-test
Basic Research Funding Project	3.32	2.51	0.81	4.44**
Budget Year Project Goal	3.45	2.87	0.82	9.30***
Professional Learning Community Input	3.17	2.02	0.76	3.62**
Process Implementation Factor	3.24	2.76	0.73	2.94*
Productive Project Factor	3.08	1.85	0.70	3.99**
Major Problem/Obstacle Projects	3.28	2.51	0.80	4.25**
Successful Project Factor	3.52	2.48	0.85	11.23***

$N=143$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Assessment in Diverse Classrooms

A 35-item “Questionnaire on Educator Inventory” (QEI) was used to assess the perceptions of educational professional staff to monitor and evaluate projects in constructing the PLCs of educational professional staff. Specifically, those who received budget funding from the Teachers Council of Thailand (TCT), in 2017, in the Northeastern region. This assessment was conducted against seven scales: basic research finding project (BRFP), the budget year project goal (BYPG), the professional learning community input (PLCI), the process implementation factor (PIM), the productive project factor (PPF), major problem/obstacle projects (MPOP), and successful project factor (SPF). Each scale consists of five items, and the five response alternatives are: ‘almost never’ or ‘0’, ‘seldom’ or ‘1’, ‘sometimes’ or ‘2’, ‘often’ or ‘3’, and ‘very often’ or ‘4’. The target group included 143 educational and project staff who received budget funding in the Northeastern region and for the 11 projects within the documentary study.

As reported in Table 1, the scale mean score ranged from $\bar{X} = 3.08$ (S.D. = 1.85, and F-test = 3.99**) in the ‘productive project factor’ scale to $\bar{X} = 3.52$ (S.D. = 2.48, and F-test = 11.23***) in the ‘successful project factor’ scale. The reliability coefficients for the Cronbach alpha reliability (α -Reliability) ranged from 0.70 to 0.85, when using the individual educational staff and project staff as the unit of analysis. Overall, these results are acceptable, which was considered a satisfactory result to confirm the acceptable use in this study.

Culturally Responsive Assessment

The evaluative research findings indicated the project administration, as well as the guidelines in developing the PLC for teacher development. The research findings can be discussed, as follows.

As a result, the small-sized schools were not able to apply to participate in those activities. However, if the small-sized schools applied to participate in the activities, this would resolve the isolation of many schools by becoming connected to the network. This would create many obstacles in administration, and management, especially in time management, since there is no reciprocal spare time. The professional network development should be promoted as the educational professional network. This was supported by the research findings of Achanya Rattana-Ubon *et al.* (2016).

For the evaluative findings of the input factor, it was found that the teachers continued to lack a good knowledge, comprehension, and attitude towards an increased workload. Several teachers may have been interested in it, but they could not see the potential benefits for their students. In relation to the implementation aspect, there were situations and problems in the implementation process by using ICT, as well as the matter of members' not having any spare time to participate in the activities.

Challenges in Assessing Migrant Students

Reviewing the product aspect, there were precise findings in most of the projects, since the projects focused on solving problems which could be achieved in a short period of time. For instance, the media and the lesson development. This was achieved because of the focus on small projects.

Relating to the students' desirable characteristics, there were no sufficient or precise outcomes. The major problems and obstacles were the members' attitudes, ICT skills, and insufficient time outcomes.

On the success factors of the project, these included strong academic leaders, the administrators' support, informal activities in developing one's core value or shared value, and strong teamwork.

The comprehension development in PLC should be focused on teachers who love their students and change their teaching method for students. This was supported by the PLC, which arose from the questions: What are schools for? Why do we have this school? What should the schools do for the society or the community? How can we call upon the schools to do their duties? How would we cooperate in our schools to make sense of one's responsibility?"

The answers provided inform how collaboration contributes to developing a clear purpose and intent, as well as the core values of schools, which belong to everyone. Moreover, using these

as guidelines or directions to lead and change the schools into a valuable goal for a common dream. When there were precise goals and guidelines for action, the action mode had to be in a hurry to find the brave persons who would volunteer to do them. For example, a select group of teachers were the frontier for trying techniques to accomplish the valuable common goal of every level of administrator, and did so in several classrooms in a small group. The teachers must volunteer and be willing to initiate. It should not be undertaken through only one person, in a single classroom. Furthermore, the teachers should not make those uncomfortable who had no trust or did not want to change. They should communicate with the other persons to understand the PLC by doing, and communicating through the findings from action (The Quality Assurance Center, 2014).

Towards Culturally Responsive Assessment

In terms of the success of the PLC from the evaluative findings, the results were supported by the approach of Hipp and Huffman (2003), who proposed that PLC successful factors were:

1. In the core leadership schools, the school administrators used democratic principles and participative administration, decentralisation, responsibility empowerment, and decision-making in the promotion of team leaders.
2. The schools with a core value and vision focused on the students' learning, where everyone took part in determining the rules and regulations in knowledge management.
3. Everyone cooperated in learning by sharing information, communication and technology data, and cooperated in planning to solve problems, as well as developing one's knowledge management, and participating in the search for knowledge, skill, and strategy, in addition to learning and practising one's own work.
4. Everyone shared one's experience by participating in shared learning, classroom visiting and observing, and expressing one's opinion on teaching practice.
5. The schools provided the supportive environment, the respect, and sincerity, which was focused on a knowledge search with critical thinking; the use of positive psychology; the attention in the relationship among students, teachers, and administrators; the communication system; and the timetable and place for the PLC.

In addition, the approach of Chookhampaeng (2017) was that the PLC findings could cause good advantages, and specifically, in two aspects:

1. The organisational aspect, as the teachers have a common energy in learning and understanding with one another.
2. The student aspect, as the teachers cooperate in developing their learning and teaching, and the growth will affect their students greatly.

This was also supported by the research findings of Asanok and Chookhampaeng (2016), who used the PLC guidelines for a model research of professional teacher development. The study found that for good teacher development, it was necessary to create the PLC, as an important instrument in teacher development. When there were changes in teachers, it would change the students' learning. This was supported by the research findings of Donhongsa (2016), in "Development of Professional Learning Community in School for Enhancing Primary School Students' Reading Comprehension", who found that the developed model from a PLC could affect the students' learning achievement in reading comprehension; the average of every class was 80.11 per cent. Moreover, the research findings of Paison, Chookhampaeng Jansang (2015), who used professional learning in the community to develop teachers' classroom research, could help teachers to change their learning and teaching in developing one's learning and innovation.

The scale mean score ranged from $\bar{X} = 3.08$ (S.D. = 1.85, and F-test = 3.99**) in the 'productive project factor' scale to $\bar{X} = 3.52$ (S.D. = 2.48, and F-test = 11.23***) in the 'successful project factor' scale. The reliability coefficients for the Cronbach alpha reliability (α -Reliability) ranged from 0.70 to 0.85, when using the individual educational staff and project staff as the unit of analysis. Overall, these results are acceptable, which was considered somewhat satisfactory.

How Professional Learning Communities are Transforming Education

In the business world, the concept of a community of practice or a collective process of learning, exchange, and growth, is well recognised for its value in creating higher performing employees, teams, and organisations. The education space is no exception. Taking notice of this proven practice, forward-looking governments, and institutions have begun introducing the concept of a community of practice in the education space, which is often referred to as PLCs.

Teaching can sometimes be an isolated profession, especially in Thailand, where teachers have few opportunities to share and exchange ideas with colleagues or to tap into the experience and expertise of their fellow educators. Professional learning communities are shifting the paradigm by providing new opportunities for educators, including school leaders and teachers in collaboration with university faculties, to break out of their silos and engage in a team-based, small-group approach to examine the teaching and learning process, as well as how to best engage and encourage students.

Do PLCs Really Work?

Internationally, there is growing evidence that proper PLC practices are related to improved teacher instruction, and lead to greater student achievement, especially when combined with an effective professional development training program for teachers.

Critically, here in Thailand, evidence from the Chevron Enjoy Science Project, which Kenan is implementing, shows that a remarkable 98 per cent of Thai teachers who participate in PLCs

applied the information in their classroom, according to an extensive third-party evaluation. In the ways that PLCs have impacted instruction, the majority of teachers indicated that they benefited from sharing and learning from others, and then applied the skills in the classroom. Further evidence suggests that when teachers receive structured support in a PLC, they are more likely to have higher job satisfaction, improved morale, and stay in the teaching profession longer.

In an indication of the Thai Government's support for PLCs, the Ministry of Education has declared that teacher development is a key priority and sees PLCs as a solution to reducing educational inequality by bringing teachers together to solve unique problems. In 2017, the Ministry mandated that all teachers must attend 50 hours of PLC meetings each year for five consecutive years, as a step towards career advancement. The PLCs are fast becoming a key driver of change in the Thai education system, supporting teachers' development and promoting a school-wide culture of improvement, which will ultimately improve student learning and performance.

Recommendations for Project Administration

1. The project will be successful according to the precise goal, which should not be too broad and can be accomplished within three months.
2. In the case of the PLC, the members included many schools, and the school administrators had to play their role and duty and sign their names to be informed in the project document.
3. The classroom study should be a determination in the following up and evaluation of the project by reflecting the success to students.
4. The project should be integrated with an enhancement for teachers' academic standing by decreasing the repetition of activity implementation.

Recommendations for Constructing a Professional Learning Community

1. The school should have a work implementation system by marking in a work implementation calendar.
2. The construction of the PLC was a small instrument for the smallest size of educational reform. It could be accessed by students mostly, and be understood by administrators with a good attitude, as well as perform an important duty to be promoted and enhanced by the administrators.
3. During the work implementation process, it was necessary to be supported by the mentor at the beginning and receive cooperative learning systematically from a small system to a larger system.



4. The major goal of constructing the PLC was the students' learning, where the school could establish a team based upon a suitable context.

Acknowledgements

This research was partially supported by Maharakham University, and Teacher Council of Thailand.

Abbreviations

TCT: Teachers Council of Thailand

ICT skills: Information and Communication Technology Skills

PLC: Professional Learning Community

TPLC model: Teachers' Professional Learning Community Model

DLT: Distance Learning Technology

BRFP: Basic Research Finding Project

BYPG: The Budget Year Project Goal

PLCT: The Professional Learning Community Input

PIM: The Process Implementation Factor

PPF: The Productive Project Factor

MPOP: Major Problem/Obstacle Projects

SPF: Successful Project Factor

References

- Amornvuthivorn K. (2018). Professional Learning Community (PLC) aims to bring culture to the classroom. Retrieved from <https://www.bangkokpost.com/opinion/opinion/1517138/teaching-reform-needs-more-work>
- Asanok, M., Chookhampaeng C. (2016). Coaching and mentoring model based on teachers' professional development for enhancing their teaching competency in schools (Thailand) using video tape. *Educational Research and Reviews*. 11(4): 134-140.
- Bangkokpost/opinion.com. Education failings: Is anyone listening? (2017). Bangkok Post. Retrieved <https://www.bangkokpost.com/opinion>
- Bangkok Post. Teaching reform needs more work. (2018). Retrieved on 7 August 2018 from <https://www.bangkokpost.com/opinion/opinion/1517138/teaching-reform-needs-more-work>. View our policies at <http://goo.gl/9HgTd> and <http://goo.gl/ou6Ip>. © Bangkok Post Public Company Limited. All rights reserved. 7 Aug 2018
- Chookhampaeng C. Teachers' learning community. *Journal of Educational Measurement*. Maharakham University, the 23rd year. (2017). 2nd Issue, December.
- Donhongsa L. Model development for constructing the professional learning/community in school "The enhancement for reading comprehension": A case study of Ban-none-song-pleuy School. The First National Academic Conference and Research Presentation. Rachatani Research. (2016).
- Hipp K, Huffman J. Professional learning communities: assessment development effects. Paper presented at the International Congress for School Effectiveness and Improvement, Sydney, Australia. (2003). January: 5-8.
- Hord SM. Professional learning communities: What are they are and why are they important. *Issues About Change*, 6(1), Austin, TX: Southwest Educational Development Laboratory. (1997): 1-8.
- Kham-O-Part P, Puthaprasert C, Yaboonthong Y, Muntabutara S. The model of teachers' professional learning community for the non-formal and informal educational center in Thailand's upper northern region. *International (Humanities, Social Sciences and Arts)*. (2017); Volume 10 Number 5 July - December 2017, Veridian E-Journal, Silpakorn University, ISSN 1906 – 3431: 348-364.
- Khon Kaen University. KCU hosts leading Universities' program and curricula fair. (2017). Retrieved on 19 January 2017 from <https://m.kku.ac.th/news/content.php?did=N0013526&l=en>

- Manabu S. School reform: The approach of “Learning Community and Theory into Practice.” (2016). Bangkok: Pabpim Publishing.
- Newspaper Section: News. The PLC model. (2018). Retrieved from <http://goo.gl/9HgTd> and <http://goo.gl/ou6Ip>. © Bangkok Post Public Company Limited. All rights reserved.
- Paison A. Chookhampaeng C, Jansang A. Teachers' Learning and Innovation Skills Development: Challenge and Changing based on Professional Learning Community.” Asian Social Science. (2015); Vol. 11, No. 27.
- Panich W. Technique of Knowledge Construction for Students during the 21st Century. (2012). Bangkok: Ta-ta-ta Publication ltd.
- Ratana-Ubol A, Areekul C, Kimpee P. Model development for strengthening social capital for being a sustainable lifelong learning society. *Procedia - Social and Behavioral Sciences* 191. (2015): 1613-1617 • June 2015
- Rodklai K. Education in Thailand. Secretary-General: The Education Council. Ministry of Education. (2017). Retrieved from https://www.bic.moe.go.th/images/stories/pdf/EDUCATION_IN_THAILAND_2017.pdf
- Sergiovanni TJ. Building community in schools. (1994). San Francisco : Josey - Bass Press.
- The Quality Assurance Center. How vocational education can 'build the nation'? (2014). Retrieved from <http://www.en.moe.go.th/enMoe2017/index.php/articles/336-how-vocational-education-can-build-the-nation>
- The Teacher of Council Thailand. Teacher professional development: Competency framework. (2018). Retrieve from http://site.ksp.or.th/content.php?site=englishsite&SiteMenuID=1888&Action=view&Sys_Page=&Sys_PageSize=&DataID=597
- The Teachers Council of Thailand. The National Scheme of Education B.E. 2560-2579 (2017-2036). (2017). Retrieved from <http://www.onec.go.th/us.php/home/category/CAT0001145>
- United Nations Development Programme, Evaluation Office. Handbook on Monitoring and Evaluating for Results. (2002). Retrieved from <http://web.undp.org/evaluation/documents/handbook/me-handbook.pdf>
- United Nations Development Programme. Handbook on planning, monitoring and evaluating for development results. (2009). Retrieved from <http://web.undp.org/evaluation/handbook/documents/english/pme-handbook.pdf>