

Designing a Blended Training Programme on Classroom Action Research and Reflective Teaching Using Online Professional Learning Community for Thai Pre-Service Teachers

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Abstract

The objectives of this study are: 1) to investigate the needs of Thai pre-service teachers involved in teaching English as an International Language for a blended training programme on classroom action research and reflective teaching using an online professional learning community; and 2) to determine the components of the blended training programme. The participants were divided into two groups, involving: 1) 53 Thai pre-service teachers involved in teaching English as an International Language who were purposively selected due to their internship period from June 2021 to March 2022; and 2) 10 volunteer English as an International Language Thai instructors who have taught the student-teachers at a Rajabhat university and would be their mentors during the internships. Two sets of research instruments were employed for data collection. They were: 1) a set of questionnaires; and 2) group interview. Descriptive statistics were used to analyse quantitative data, while Grounded Theory was employed to analyse qualitative data. Regarding the need analysis, the results showed that the pre-service teachers' needs for their teaching and testing development were, on average, high. The top three needs were: 1) producing teaching materials using computer, Internet, and other technologies; 2) designing and teaching listening and speaking skills; and 3) testing and evaluation. On the other hand, their needs for classroom action research training were generally moderate. The top three needs were: 1) designing classroom innovation and implementation, 2) identifying classroom problems; and 3) reporting research. Moreover, their needs for an online professional learning community were reported at a moderate level because they were not sufficiently knowledgeable about it. Most of the respondents were interested in using Line Group and Facebook for communicating within the online professional learning community. With respect to the components of the blended training programme, the findings indicate that the components included: 1) classroom action research skills; 2) reflective teaching skills; 3) blended learning; 4) professional learning community; and 5) professional development.

Keywords: *blended learning, classroom action research, pre-service teacher, professional learning community, reflective teaching.*

Introduction

English has played a significant role as an international language in Thai education, particularly at Rajabhat universities where the English Curriculum of Education Programme is offered. To be specific, the English language is important in four areas related to teaching and learning, which are: 1) a channel for connection; 2) a factor of intercultural communication; 3) an equipment for occupation; and 4) a medium of instruction.

In Thailand, the English curriculum for pre-service teachers in Rajabhat universities (Office of the National Education Commission, 1999) aims to develop national teachers' education. The purpose of the programme is to produce good and qualified English pre-service teachers by providing them with a good grounding of English as well as teaching methodology required for their future career. In 2011, the English education programmes at Rajabhat universities revised their Education Curriculum in English in order to produce high quality pre-service teachers skilled in both English language skills and English teaching skills. This revision involved increasing total credits, renewing course descriptions, and increasing both English language courses and English pedagogy courses. Additionally, the student-teachers are empowered through both curricular and extra-curricular activities throughout their five-year programme. The fifth year of their programme is reserved for two internship courses to extend their use of English for communication with primary and secondary school students in real classrooms. The goal of the 2011 English Education Curriculum was revised in 2016 to focus on producing graduates who are equipped with six significant characteristics, which are: 1) competency in both English language learning and teaching skills; 2) morality, ethics, discipline and honesty towards the teaching profession; 3) ability to integrate and apply knowledge for development of community and country; 4) wide vision to be responsive to the rapid changes in society, economics, politics and technologies; 5) ability to apply mathematics and information technologies for critical thinking and planning in learning and teaching; and 6) positive attitudes towards teaching as a profession.

Despite going through almost 100 credits of English and English teaching courses including two education research and two practicum courses, the pre-service teachers' English ability and teaching and research skills are still lacking. This issue obviously emerges when they are engaged in their internships in the fifth year. In an effort to solve this problem and meet the pre-service teachers' needs, the researchers intended to employ classroom action research (CAR) blended with reflective teaching (RT) using both onsite and online activities in designing an innovative blended training programme.

Literature Review

Reflective learning is very effective for English teachers' professional development in Thailand. Schön (1996) defines reflective teaching as teachers' practising careful analysis of their own teaching experiences. This means they attentively look at and find ways to manage application of knowledge in their classrooms. In other words, they assess their teaching practice and get information for analysing their own strengths and weaknesses as a way to improve for better teaching and learning. Loima (2016) reflected on teachers' professional development in Thailand and suggested that more attention should be given to teachers' learning skills to increase motivation, improve the classroom atmosphere, and make room for different ways of thinking and learning. Nguyen's (2019) study on how to facilitate 48 Thai pre-service English Teachers to teach writing used a reflective teaching method to describe the phenomenon. The findings showed the success of this teaching method, through which student-teachers could reflect on their strengths and weaknesses during micro-teaching. Recently, Nguyen (2020) studied reflecting teacher's professional

development trends in Thailand. In this study, the MLS approach was adapted to promote 55 Thai pre-service English teachers' reflective ability. In the Microteaching Lesson Study (MLS) cycle, they practised exploring their teaching problems, reflecting the problems, and critically analysing how to teach writing in the English as a Foreign Language context. By promoting the understanding and practice of these future teachers, they have achieved great success through this teaching method, thus enabling them to become reflective and thoughtful teachers.

A PLC base for self-development and on-the-job learning is very effective. In Thailand, Chookamnerd et al. (2014) and Mahimuang (2018) suggested that teachers' PLC of the 21st century should consist of six main parts, which are: 1) a caring community, 2) shared leadership, 3) shared goal, 4) full participation of teachers and students, 5) a professional team training system, and 6) work-based supportive system of learning. Similarly, PLC management in the study of Leuanoi (2019) focusing on the PLC model of World Class Standard School in Thailand also suggested the same components, which are leadership, professional learning and development, caring community, teamwork, shared vision, and supportive community. At present, government agencies have encouraged educational institutions to develop teachers and personnel through PLC activities. The goal is to enable educational institutions to apply community-based professional learning processes to develop education on a variety of issues (The Teachers' Council of Thailand, 2020). Therefore, the concept of community teaching professional learning is widely used in educational institutions today. Recently, Maitreephun et al, (2021) reviewed school administrators' roles through Thai cultural contexts concerning the promotion of PLCs in Thailand within the past decade. The review reported that an important strategy is to encourage and provide opportunities for members of the learning community to rotate their learning with other professional development teams at school, so they could understand the different roles played by different members of the learning community.

Currently, conducting CAR is emphasised in teacher professional development. It is the most meaningful and valuable research because it improves student learning and classroom teaching abilities. To clarify, CAR is the use of the research process or research results as the basis for learning activities. This concept was implemented to effectively train teachers from child development centres across Thailand (Wongwanich, 2017). Similarly, Meesuk et al. (2020) conducted a research study entitled, "Classroom action research-based instruction: The sustainable teacher professional development strategy", which investigated the current situation and consequences of teachers at children's development centres' use of CAR based on teaching. The results showed that 1) the majority of teachers conducted informal CAR to solve children's behavioural problems and encourage children's development, and 2) the consequences of action research-based teaching were significantly higher than standard requirement teaching at the significance level .05. Most recently, the classroom research and development model for college teachers in the three southern border provinces has been formulated in three stages: preparation and planning, learning via Kalyanamir coaching and mentoring, and evaluation. During the learning phase, the coach and the mentor carry out six support activities with Kalayanamir or magnificent and facilitative friendship. They are: 1) suggesting how to teach and which research strategies to use, 2) working with teacher designers to create learning activities and assessment methods, 3) developing a learning plan following these activities, 4) creating assessment tools, 5) implementing the activities in class, and 6) publishing research articles about the results of their class activities (Lateh et al., 2021).

Pre-service and in-service training for teachers in online and blended learning using information and communication technologies (ICT) has enabled the rapid spread of online and blended courses. Learning and teaching (partially) online is one of the fastest growing areas. The reasons for developing all or parts of online learning programmes is often attributed to their cost-effectiveness, accessibility and ability to make the trainers and

teachers available in places where they otherwise would not have been available. Offering online courses can be seen as a new way for teaching and learning to become the broader field of distance learning (Philipsen et al., 2019). At present, research on blended learning is increasing in Thailand. For instance, Kanchanachaya & Shinasharkey (2015) studied the interactions between anonymous and non-anonymous pre-service teachers in blended learning using creative problem-solving techniques to enhance pre-service teachers' ability in professional practices. Inpeng (2020) studied the use of Facebook in a Teaching English as a Foreign Language (TEFL) programme based on the Technological Pedagogical Content Knowledge Framework (TPACK) framework. The results of both research studies presented advantages of blended learning for training for English teachers.

Research Objectives

The objectives of this study cover two areas of the investigation. They are as follows:

- i. to investigate the needs of Thai pre-service teachers involved in teaching English as an International Language (EIL) for a blended training programme on CAR and RT using an online professional learning community (PLC); and
- ii. to determine the components of the innovative blended training programme.

Research Method

In this study, the mixed-methods research approach (Creswell, 2003) was used for collecting and analysing data. Following the two research objectives, two phases of research were conducted.

Phase 1: Exploring the needs of EIL Thai pre-service teachers for the blended training programme on CAR and RT using an online PLC

The details of the research method in Phase 1 are as follows. Firstly, the research population and samples involve 53 EIL Thai pre-service teachers. The research samples were selected using purposive sampling method. They were EIL Thai pre-service teachers from a Rajabhat university enrolled in the "Testing and Evaluation for Language Teachers" course in the second semester of the 2020 academic year. Forty-five of the research participants (84.90%) were female, and eight (15.09%) were male. All the participants were fourth-year undergraduate students who majored in English Education. All have also had two school and teaching practicum experiences and conducted one classroom research. None of them had ever been or studied abroad. Almost all of them (83.02%) are at a beginner's level in English proficiency, whereas the rest (16.98%) were at an intermediate level. Secondly, the research tool comprised a five-point Likert questionnaire on the needs of the EIL Thai pre-service teachers in using an online PLC. The questionnaire consists of two parts. Part A obtained the participants' background information, such as gender, levels of English proficiency and year of practicum experiences. Part B contains 35 five-level Likert items to determine their needs for English teaching and classroom researching training courses and an online PLC. The quantitative data were analysed by mean and standard deviation. Then, the mean scores were interpreted into the level of the participants' needs from "Lowest" to "Highest" (Table 1). Subsequently, the needs of the participants in the first group of Phase 1 were ranked based on the mean scores.

Table 1

Scale for Interpreting the Mean Values of the Respondents' Needs

Scale	Mean Score	Level of the Respondent's Needs
1.	1-1.80	Lowest
2.	1.81-2.60	Low
3.	2.61-3.40	Moderate
4.	3.41-4.20	High
5.	4.21-5.0	Highest

Phase 2: Designing the blended training programme on CAR and RT using an online PLC

The details of the research method in Phase 2 are as follows. Firstly, the participants in the second group of Phase 2 were 10 volunteer EIL Thai instructors who have taught the student teachers at the research site and would serve as their mentors during their internships in the 2021 academic year (i.e., June 2021 to April 2022). They have taught at the university for more than 10 years and have at least six years of experience in classroom observation at schools. During the past five years, they have also had experience in conducting and publishing at least three sets of research in English Language Teaching (ELT), CAR, curriculum and instructional design, as well as open and distance learning. Secondly, the group interview using an interview form as another research instrument was employed to obtain qualitative data in this phase. Interviews were conducted with the 10 volunteer EIL Thai instructors after the students' needs analysis. The purpose was to determine the instructors and mentors' in-depth opinions on the draft of the blended training programme on CAR and RT using an online PLC. This draft of the innovative blended training programme had been designed by the researcher using related literature and previous studies, as well as the needs analysis of the participants in Phase 1. The Grounded Theory (Strauss & Corbin, 1998) was used to analyse the instructors' opinions in this phase and the findings were used to guide the design of a comprehensive blended training programme on CAR and RT using the online PLC for further implementation.

Findings

The results of the needs of EIL Thai pre-service teachers for the blended training programme on CAR and RT using online PLC

Regarding the investigation of the needs of the EIL Thai pre-service teachers for the blended training programme on CAR and RT using online PLC, the quantitative data from the 35 five-level Likert questionnaire were analysed and interpreted by mean and standard deviation, and presented into four themes, which are:

- i. The needs of the EIL Thai pre-service teachers for the teaching and testing development;
- ii. The needs of the EIL Thai pre-service teachers for CAR training;
- iii. The understanding of the EIL Thai pre-service teachers in using an online PLC; and
- iv. The communicative devices that the EIL Thai pre-service teachers are interested and capable of using for the online PLC.

Table 2

Needs of EIL Thai Pre-Service Teachers for the Teaching and Testing Development

Item no.	Questions	Needs		Result Interpretation	Ranking
		M	SD		
Needs for the teaching and testing training course					
1	Needs in communicative language teaching	3.67	1.13	High	10
2	Needs in task-based teaching	2.85	0.92	Moderate	17
3	Needs in project-based teaching	2.72	0.86	Moderate	18
4	Needs in vocabulary and language teaching	3.85	1.12	High	5
5	Needs in grammar and language teaching	3.80	1.07	High	7
6	Needs in short-term and daily lesson planning	3.83	0.95	High	6
7	Needs in training for giving feedback and error correction for students	3.63	0.89	High	12
8	Needs in training for designing and teaching listening and speaking skills	4.17	0.88	High	2
9	Needs in training for designing and teaching oral communication skills	3.85	0.81	High	5
10	Needs in training for designing and teaching reading skills	3.72	0.91	High	8
11	Needs in training for designing and teaching writing skills	3.65	0.93	High	11
12	Needs in training for effective body language in EIL teaching	3.67	1.05	High	10
13	Needs in training for designing and teaching students' intercultural communication skills	3.37	1.06	Moderate	15
14	Needs in training for effective classroom instructions in EIL teaching	3.87	1.11	High	
15	Needs in training for testing and evaluation	4.04	0.99	High	3
16	Needs in training for planning extra-curricular activities with teaching purpose	3.37	0.92	Moderate	16
17	Needs in training for team teaching	3.54	1.20	High	13
18	Needs in training for peer evaluation	3.43	0.99	Moderate	14
19	Needs in training for producing teaching materials using computer, Internet, and other technologies	4.24	1.00	High	1
20	Needs in training for self-reflective teaching	3.69	1.04	High	9
Total		3.64	0.37	High	-

The mean score for each item in Table 2 refers to the needs of the EIL Thai pre-service teachers for the teaching and testing training course. The scores suggested that the EIL Thai pre-service teachers consider the need for a teaching and testing training course as high (M=3.64, SD=0.37). The top three needs for the majority of the EIL Thai pre-service teachers for the teaching and testing training course were (1) the needs in training for producing teaching materials using a computer, the Internet, and other technologies (M=4.24, SD=1.00), (2) the needs in training for designing and teaching listening and speaking skills (M=4.17, SD=0.88), and (3) the needs in training for testing and evaluation (M=4.04, SD=0.99).

When considering each item, the participants in this study ranked the following highly: the needs the training for effective classroom instructions in EIL teaching (M=3.87, SD=1.11), short-term and daily lesson planning (M=3.83, SD=0.95), effective body language in EIL teaching (M=3.67, SD=1.05), and communicative language teaching (M=3.67, SD=1.13). In addition, the needs in training for vocabulary (M=3.85, SD=1.12), grammar (M=3.80, SD=1.07), reading (M=3.72, SD=0.91), writing (M=3.65, SD=0.93) and oral communication teaching skills (M=3.85, SD=0.81) were also considered high. However, the needs in training for task-based teaching (M=2.85, SD=0.92), project-based teaching

($M=2.72$, $SD=0.86$) intercultural communication skills ($M=3.37$, $SD=1.06$), extra-curricular activities ($M=3.37$, $SD=0.92$) and peer evaluation ($M=3.43$, $SD=0.99$) were considered moderate. This can be interpreted as the majority of the participants in this study need training for improving knowledge and practical skills of English language teaching and testing, rather than training for teaching methods and classroom activities.

Table 3

Needs of EIL Thai pre-service teachers for classroom action research training

Item no.	Questions	Needs		Result Interpretation	Ranking
		M	SD		
Needs for the classroom research training course					
1	Needs in training for understanding theory and application of CAR	3.17	0.74	Moderate	7
2	Needs in training for identifying classroom problems	3.39	0.84	Moderate	2
3	Needs in training for planning steps of CAR	3.30	0.95	Moderate	4
4	Needs in training for designing classroom innovation and implementation	3.57	0.93	High	1
5	Needs in training for designing quantitative research tools and data collection	3.17	1.04	Moderate	8
6	Needs in training for designing qualitative research tools and data collection	3.22	0.96	Moderate	6
7	Needs in training for analysing data	3.28	0.99	Moderate	5
8	Needs in training for interpreting and presenting data	3.28	0.88	Moderate	5
9	Needs in training for reporting research findings	3.33	0.95	Moderate	3
	Total	3.30	0.12	Moderate	-

The mean score for each item in Table 3 indicates the needs of the EIL Thai pre-service teachers for the classroom research training course. The scores suggested that the need the classroom research training course was considered moderate ($M=3.30$, $SD=0.12$). The top three needs for the majority of the EIL Thai pre-service teachers for the classroom research training course were (1) the needs in the training for designing a classroom innovation and implementation ($M=3.57$, $SD=0.93$), (2) the needs in the training for identifying classroom problems ($M=3.39$, $SD=0.84$), and (3) the needs in training for reporting research findings ($M=3.33$, $SD=0.95$). As can be seen from the table, the findings show that the majority of the participants of this study consider their need for the classroom research training course to be moderate. In contrast, the needs in training for designing classroom innovation and implementation was considered high by the majority of the participants. This can be interpreted as most of the EIL Thai pre-service teachers need training that focused on designing and implementing classroom innovation, rather than on conducting classroom research.

Table 4

The understanding of EIL Thai pre-service teachers of an online PLC

Item no.	Questions	Needs		Result Interpretation
		M	SD	
1	The students understand the online PLC	2.54	0.82	Moderate
2	The students are aware of the importance and the roles of PLC for professional development	2.61	0.66	Moderate
	Total	2.57	0.04	Moderate

Table 4 describes the understanding of the EIL Thai pre-service teachers about the online PLC. The findings show the EIL Thai pre-service teachers have a moderate understanding of the online PLC (M=2.57, SD=0.04). The findings also indicate that the majority of the EIL Thai pre-service teachers understand the online PLC, and are moderately aware of the importance and the roles of the PLC for professional development. This can be interpreted as most of the EIL Thai pre-service teachers in this study were not adequately knowledgeable about PLC and professional development.

Table 5

Communicative devices that the EIL Thai pre-service teachers are interested in and capable of using for the online PLC

Item no.	Questions	Needs		Result Interpretation	Ranking
		M	SD		
1) Line Group		4.00	0.95	High	1
2) Facebook Group		3.71	1.01	High	2
3) Web Blog		2.47	0.89	Low	4
4) Club House		2.77	1.33	Moderate	3
5) Others		-	-	-	-
	Total	3.01	0.66	Moderate	-

Table 5 shows the communicative devices that the EIL Thai pre-service teachers are interested and capable of using for the online PLC. The findings show that Line group (M=4.00, SD=0.95) and Facebook group (M=3.71, SD=1.01) received the highest scores, and they can be interpreted as the two most interesting and user-friendly options for most of the EIL Thai pre-service teachers.

The results of the design of the blended training programme on CAR and RT using an online PLC

The blended training programme will be an innovative approach of RT blended with conducting the CAR via both onsite and online tasks or activities in order to promote the EIL Thai pre-service teachers' CAR and teaching skills and enhance their online PLC and professional development (PD). It will be implemented before, during, and after their internships. The findings from the group interviews of 10 instructors illustrate the five main components, and these will be included in this approach. These components are: 1) CAR skills; 2) RT skills; 3) blended learning (BL); 4) PLC; and 5) PD. All components were agreed on by all the participants. Some of their opinions are also shown below.

Firstly, CAR skills will include six significant subskills practised in six steps during the training phase. They are: 1) identifying classroom problems and need analysing; 2) planning a research project; 3) designing innovation; 4) collecting and analysing data; 5) presenting research results; and 6) writing a research report. Some of the responses are as follows:

To start off, teachers should realise specific problems in their own classroom. (Participant 3)

I think need analysis should also be included in the first step. (Participant 7)

Innovation for solving problems should be immediately designed after the planning the research project. (Participant 2)

After data collection and analysis, the research results should be shared to the others at the end of this phase. (Participant 1)

Research report writing was proposed by one of the participants and this was agreed on by all instructors:

At least an informal research report of a few pages should be written as the last step. (Participant 4)

Secondly, RT skills will cover three important areas: 1) contextual factors; 2) teaching approach or method; and 3) perceptions towards teaching. To clarify, the EIL Thai pre-service teachers will be assigned to implement an action plan designed to bring about change in their classrooms and monitor the effects of their innovations. Consequently, they will be encouraged to reflect on their investigation via twelve online reflective teaching entries. Some of the participants' opinions about this component are presented as follows:

From my experiences, each school has a different culture and context about classroom action research and PLC. This should be reflected on first. (Participant 6)

They should also reflect on how they teach and how they feel about their teaching. (Participant 10)

Thirdly, the blended learning in this study will refer to the blending of CAR and RT and provide both onsite and online activities for the pre-service teachers during the implementation of the innovative CAR-RTB training programme. To clarify, onsite activities will include 24-hour training, three classroom visits, two school visits, and two seminars. On the other hand, the online tasks will involve twelve online reflective (ORT) entries during Internship 1, two online conferencing during Internship 2, and the other two online PLCs during their period as novice teachers. The following are some opinions given by the participants:

Onsite activities should include training, visiting, and attending at least one seminar in a semester. (Participant 5)

Online conferences are beneficial for both pre-service and in-service teachers. (Participant 8)

Fourthly, the PLC in this study will be managed via online conferencing. This includes six characteristics: 1) maintaining a common mission, vision, values and goals; 2) building a collaborative culture; 3) participation in collective research; 4) action-orientation; 5) advocacy of continuous learning and continuous improvement; and 6) results-orientation. These are shown in some of the following participants' opinions:

Online conferencing in the training programme can be regarded as a PLC. (Participant 2)

An online PLC can encourage and support teachers to keep on doing classroom action research for the best of their teaching and their students' learning. (Participant 9)

And lastly, PD will ultimately be the expected goal from the innovative blended training programme. The programme will be planned, designed, implemented, evaluated, improved on, and developed using the framework of PD as a guideline. This is reflected in the opinion of one participant, who stated that "PD is the sustainable goal of this training programme."

Moreover, the findings from the group interviews also discussed the two phases of the training procedure, as presented and supported by some opinions of the participants below.

Phase 1: The training phase

The purpose of the training phase will be focused on the development of the EIL Thai pre-service teachers' conducting classroom action research and practising reflective teaching. The training phase will be divided into three stages.

Stage 1: Training. The objective of the first stage will be to prepare the pre-service teachers for their internship in the next school year. The trainers will provide them knowledge and practice about CAR, teaching and learning methods, and ORT according to their needs preliminarily investigated via the needs analysis questionnaire. In the last session of this stage, the pre-service teachers will be assigned to plan their CAR and design innovations and research tools for the next stage.

Don't forget to assign our students with the task to design their research and innovation at the end of this stage. (Participant 3)

Stage 2: Internship I. The objective of the second stage will be to encourage the pre-service teachers to conduct action research in their own classroom. Additionally, they will be assigned and facilitated to assess and evaluate their own teaching and CAR conduct and write twelve entries of ORT on their innovation implementation. At the end of this stage, a seminar will be held to foster their in-depth and critical discussion about the lesson learnt during this stage.

They should be asked to reflect on their experiences of their teaching and conducting research in their classroom. (Participant 1)

This can be done as writing teachers' journal via a web blog. (Participant 10)

Stage 3: Internship II. The last stage of the first phase will aim to foster the pre-service teachers' engagement in the PLC via online conferencing. Two online conferences will be held for them to share information and experiences of their teaching and learning development or difficulties in using CAR and RT. This will help increase their attendance and communication as an online platform is easily accessed and can save time. However, a face-to-face seminar will still be necessary for their PLC after the online meetings. Moreover, this will be the most important time to disseminate and discuss the findings of their context-based research.

Despite the limitation of time, a seminar should also be administered at university. (Participant 7)

Phase 2: The follow-up phase

The purpose of the follow-up phase will be focused on the EIL novice teachers' PLC and PD. In other words, it aims to examine the impact of the training programme on their use of an online PLC and the role of online communication in developing their PLC and PD. To achieve this purpose, in addition to conducting two school visits, the novice teachers will be involved in two online conferences. This will help strengthen their PLC and empower their PD in their professional lives.

In spite of their graduation, we should be visiting them at their schools and arrange online conferences at least twice during the first year of their teaching. (Participant 8)

Discussion

The discussion is divided into two parts: 1) the study of the needs of EIL Thai pre-service teachers for the blended training programme on CAR and RT using an online PLC; and 2) the design of the innovative training programme.

The needs of EIL Thai pre-service teachers for the blended training programme on CAR and RT using an online PLC

The study attempts to gain insights into the needs of EIL Thai pre-service teachers for their teaching and testing development, classroom researching training, and the understanding of the online PLC. The findings indicate that the primary need in the teaching and testing training course was to produce teaching materials using the computer, Internet, and other technologies, while the primary need in the classroom research training course was to design classroom innovation and implementation. This implies that after the EIL Thai pre-service teachers have experienced observing and teaching in the real classroom in their respective school practicum experiences, they perceived the importance of development and innovation of teaching materials using technology to motivate and meet the needs of EFL students to study English. This is in line with Chumworatayee (2019), who studied English language teaching practices in Thailand and found that Thai teachers who teach English place greater emphasis on designing their own materials to meet the needs and interests of their students. Therefore, they need knowledge and skills to develop their own teaching materials.

The findings also indicate that the second need in the teaching and testing training course was to design and teach listening and speaking skills, and the second need in the classroom research training course was to identify classroom problems. This may imply that the EIL Thai pre-service teachers may not be able to apply the teaching of listening and speaking and classroom research theory that they have learnt through their coursework into practice while they were involved in the teaching practicum practice. This also implies that the coursework they go through provides fundamental knowledge, including in teaching, testing and researching theories and methods. However, this may not be sufficient to prepare the pre-service teachers to deal with problems and issues in real EFL classroom settings. This is in line with Yin (2019), who studied perceptions of EIL Korean pre-service teachers in practicum experience, and found that it was very difficult for EIL Korean pre-service teachers to put teaching theory knowledge from the coursework into practice, especially in an EFL speaking class. They need training for practical skills that they can apply in the practicum experience.

The findings also indicate that the EIL Thai pre-service teachers moderately understand the online PLC and PD, because they are not sufficiently knowledgeable about them, and do not know their importance. Most of the EIL Thai pre-service teachers are interested in using Line Group and Facebook for communicating in the online PLC. This is in line with Amornrit and Suwansumrit (2020), who found that YouTube, Line Group and Facebook are suitable online learning devices for Thai learners.

Studying the needs of pre-service teachers helps to design and develop the content of the blended training programme, because the pre-service teachers will receive training on what they really want to be trained in, and it will help them prepare themselves to better deal with real classroom settings.

Designing the blended training programme on CAR and RT using an online PLC

The blended training programme on CAR and RT using the online PLC will consist of five main components. They are: 1) CAR skills; 2) RT skills; 3) BL; 4) PLC; and 5) PD. The discussion of each component is as follows.

The first component of the blended learning programme is CAR skills. This component needs to be firstly addressed, separated into subskills, and replayed in several steps during the training phase. These refer to: 1) identifying classroom problems and needs analysis; 2) planning a research project; 3) designing innovation; 4) collecting and analysing data; 5) presenting research results; and 6) writing a research report. This is in line with Kemmis and McTaggart (1990), who reported that the cycles of Plan-Act-Observe-Reflect (or PAOR) should be repeated in order to solve classroom problems. The repetition also helps to promote classroom action research skills.

The second component is RT skills. This is in line with Richards and Lockhart (1996), who stated that teachers need to self-reflect on three important areas for self-evaluation and improvement in their own classrooms. These areas cover institutional factor, a teaching approach or method, and a personal view of teaching.

The third component of the training programme is BL. This is because applying BL activities in the innovative training programme will make it more flexible, effective, engaging, and trainer-centred. This is consistent with the pre-service teachers' high interest in using Line Group and Facebook Group for the online PLC after onsite training, during and after their internships.

The fourth significant component is PLC, which is defined by DuFour et al. (2010) as an "ongoing process in which educators work collaboratively in recurring cycles of collective inquiry and action research to achieve better results for the students they serve" (p. 11). The characteristics of a successful PLC need to be intensively promoted both onsite and online via the innovative training programme.

The eventual component of the innovative approach is PD. This will ultimately be the expected goal from the innovative training programme. Effective PD should be composed of these following characteristics: relevant, collaborative, practice-based, future-focused, challenging, and sustained (Williams, 2012).

It can be summarised that the BL programme on CAR and RT using the online PLC for the EIL Thai pre-service teachers will be designed basing on five main components, which are CAR skills, RT skills, BL, PLC, and PD.

This study can contribute to the management of pre-service teacher education programmes, and bring about changes for teachers at Rajabhat universities, whether at the research site or other universities of the same nature. The results of the needs analysis and the design of the innovative training programme can shed light on how university policies concerning preparing pre-service teachers before they begin their professions will be adjusted or revised to have real context teaching experiences at school sites. Also, the impacts of the study can support teachers in the English Education programme in terms of supervising their students in conducting CAR and RT practices. Moreover, as the national education policy suggests that increasing educational opportunities should be through digital technology for education for people of all ages, this study could influence novice teachers to apply and utilise an online PLC for their lifelong professional development (ONEC, 2017). It is recommended that the model or components of the blended learning programme at the research site and other universities are implemented and verified for better generalisation.

Conclusion

This research study aimed to investigate the needs of the EIL Thai pre-service teachers for a blended training programme on CAR and RT using an online PLC, and to examine the components of the innovative blended training programme. A five-point Likert questionnaire was used to explore the needs of 53 EIL Thai pre-service teachers for the blended training programme. The questionnaire was divided into four parts which are the needs for teaching and testing development, the needs for CAR training, the understanding of an online PLC, and the communicative devices that the participants want to use for the online PLC. To examine the components of the innovative blended training programme, group interviews were conducted to obtain the opinions of 10 volunteer EIL Thai instructors on the components of the blended training programme. Findings from the needs analysis show that the EIL Thai pre-service teachers need to be trained on how to produce teaching materials using the computer, Internet, and other technologies, how to design and teach vocabulary, grammar, reading, listening, speaking and writing skills, how to test and evaluate the students' English skills, how to design classroom innovation and implement it in the classroom, and how to identify classroom problems. The findings on the needs analysis implies that the EIL Thai pre-service teachers need training on knowledge and practical skills of English language teaching and testing, as well as teaching material and classroom innovation designs rather than teaching methods, classroom activities and classroom research. The findings also indicate that the EIL Thai pre-service teachers prefer Line Group and Facebook to communicate in the online PLC, as they consider these options to be convenient communicative devices. The findings from the group interviews of the EIL Thai instructors indicated that the training programme should include five components, which are CAR skills, RT skills, BL, PLC, and PD. It was also suggested that the innovative training programme should be implemented in two phases and four stages via both onsite and online activities.

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