The Multilayered Peer Coaching Model and the In-Service Professional Development of Tertiary EFL Teachers

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Abstract

The increasing need to learn English worldwide leads to the rapid development in the field of Teaching English as a Foreign Language (TEFL). Teachers in this profession are required to reach a much higher level of professionalism now, and their in-service professional development can be an effective approach to updating their professional learning and practice. However, many existing programs for in-service professional development could not always reach their goals as expected. Therefore, this study aimed at developing and evaluating the Multilayered Peer Coaching Model (the MPC Model) for the tertiary EFL teachers to have their in-service professional development. Five phases based on the instructional system design theories were followed for developing this model, and the data for its efficiency were collected from such instruments as tests, observations, teacher's logs, researcher's field notes, and questionnaires which were responded by the EFL teachers and the students at Guiyang University in China. The results from this study showed that the MPC Model had positive impacts on the tertiary EFL teachers' in-service professional development.

Keywords: the Multilayered Peer Coaching Model, in-service professional development, tertiary EFL teachers, cooperation

1. Introduction

English language nowadays is strongly associated with the development of societies, and it has received more attention. The situation that an increasing number of people are learning English leads to the new trends of teaching English as a foreign language (TEFL) and the updating of its requirements. The TEFL in China has been in its reform and innovation in line with the rapid development of China's economy. The Ministry of Education has put more emphasis on the TEFL in higher institutions, and updated the "Syllabus for English Majors of Colleges or Universities" in 2001 and issued the new "College English Curriculum Requirements" in 2006. So the EFL teachers are confronted with more challenges now because there is a much higher level of professionalism in EFL today (Richard, 2008). In fact, professionalism is regularly used in a constitutive sense to refer to practitioners' knowledge, skills and conduct (Leung, 2009), and can be defined as the professional growth (Crandall, 1993), and what's more, its higher level can be reached by conducting in-service professional development. For a better implementation of the new regulations in China's TEFL requirements, the tertiary EFL teachers there are encouraged to do so.

The tertiary EFL teachers in China are usually grouped into two sections: in Section One the EFL teachers teach English to non-English major students by focusing on general English skills, namely, listening, speaking, reading, writing, and translating; those in Section Two teach English to English major students by delivering not only general English skills courses, but also specialized courses such as English linguistics, American and British literature, translation between Chinese and English, culture studies, English teaching methodology, etc. Working in colleges or universities, the EFL teachers need to complete the required tasks related to both teaching and research each year. In general, the teachers in the first section has much heavier teaching load, and the teachers in the second section has focused more on both teaching and research because most of them have a specific research focus. China has increased its college enrollment for a more than decade, during the 1996-2000 period there was a total enrollment of over 11 million, from 2001 to 2005 the number of university students were up to 16 million (CERNET, 2001). Therefore, the workload has increasingly been heavier for the tertiary EFL teachers

in China whether teaching non-English majors or English majors.

In-service professional development for EFL teachers refers to the education to help them develop their skills in the field of TEFL, and it usually takes place after a teacher begins his or her work responsibilities. Its importance has been stressed by many researchers (for example, James, 1973; Widden et al., 1996; Day, 1999; Dall'Alba & Sandberg, 2006) and its difficulties have been discussed as well. Actually, in-service professional development should not only offer the opportunities to update the EFL teachers' professional knowledge, but also provide the platform to help them practice what they have updated. As what Tsui (2011) claimed, EFL teacher education takes the areas of study in applied linguistics as the knowledge base, and in particular the theories of second language acquisition, but recently EFL teaching has been considered as a largely skills-based profession involving the acquisition of practical skills in classroom. This suggested that both theories and practice should be involved in EFL teachers' in-service professional development programs.

However, Ono and Ferreira (2010) have pointed out that many models of professional development do not achieve their ambitious learning goals. In many researchers' studies (for example, Fullan & Hargreaves, 1996; Ball & Cohen, 1999; Collinson & Ono, 2001; Feiman-Nemser, 2001; Villegas-Reimers, 2003; Schwille & Dembélé, 2007), they found that traditional in-service teacher professional development programs are delivered in the form of workshops, seminars, conferences or courses, which have been criticized as being brief, fragmented, incoherent encounters that are decontextualised and isolated from real classroom situations. At the same time, some programs for Chinese tertiary EFL teacher in-service professional development faced the similar dissatisfaction, in the studies of the researchers (for example, Zhang & Li, 2003; Liu, 2005; Liu, 2006; Zheng, 2010), they observed that Chinese EFL teachers are often trained in a theoretical, academic, or research-oriented way which makes them tend to be passive, and the theory-practice gap has always been criticized by school teachers when commenting on these training programs. As what Wen and Ren (2010) described in their survey by reviewing the characteristics of the literature concerning the tertiary EFL teacher in-service professional development in China from the year of 1999 to 2009, many problems were linked to such limitations as being isolated from EFL classrooms and neglecting the teachers' demands.

Therefore, this study aimed to develop and evaluate the Multilayered Peer Coaching Model (the MPC Model) for tertiary EFL teachers to have their in-service professional development. This study provided the answers to the following research questions:
1). What are the components and logical steps of developing the MPC Model?

2). Does the MPC Model help tertiary EFL teachers improve their professional knowledge and teaching ability?

2. The ADDIE Model and the MPC Model

2.1 The ADDIE Model

Instructional System Design (ISD) is the practice of maximizing the effectiveness, efficiency and appeal of instruction. It is a problem-solving process that has been applied to the creation of learning. Lots of ISD models have been emerged based on various learning theories, such as, ADDIE Model, Dick and Carey's Model, Kemp Model, Seel and Glassgow Model, etc. These models help to visualize the problem and break it down into discrete and manageable units. A value of a specific model is determined within the context of use. The ADDIE Model with the characteristics of being easily followed becomes much more popular. Hodell (1997) once claimed that each instructional design model is rooted in what is called the ADDIE Model. Kruse (2011) ascertained that although there were more than 100 different ISD models, most of them were generated based on the generic ADDIE Model.

Edu Tech Wiki (2005) illustrated the ADDIE Model by displaying its procedure called Branch's procedure as follows:
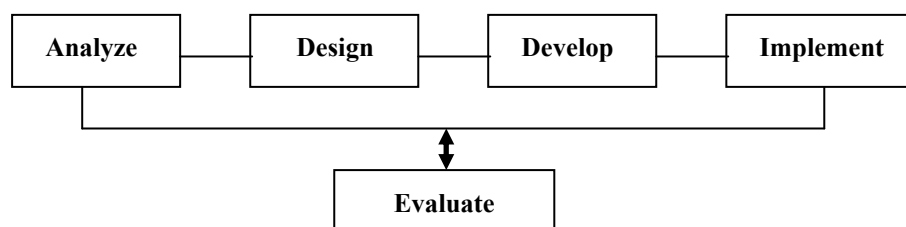
Figure 1. General Instructional Design

As shown in Figure 1, the first letters of its five phases form the acronym "ADDIE". In the "Analyze" phase, the instructional problems are clarified, the instructional goals and objectives are established and the learning environment and learner's existing knowledge and skills are identified. The "Design" phase deals with learning objectives, assessment instruments, content, subject matter analysis, lesson planning, and media selection. The "Develop" phase is for instructional designers and developers to create and assemble the content assets that are blueprinted in the design phase. During the "Implement" phase, a procedure for training the learners is developed. The training should cover the course curriculum, learning outcomes, method of delivery, and testing procedures, etc. The "Evaluate" phase is composed of two parts: formative evaluation and summative evaluation. Formative evaluation is present in each stage of the ADDIE process. Summative evaluation includes tests designed for domain specific criterion-related referenced items and provides opportunities for feedback from the learners or users (See Figure 2).
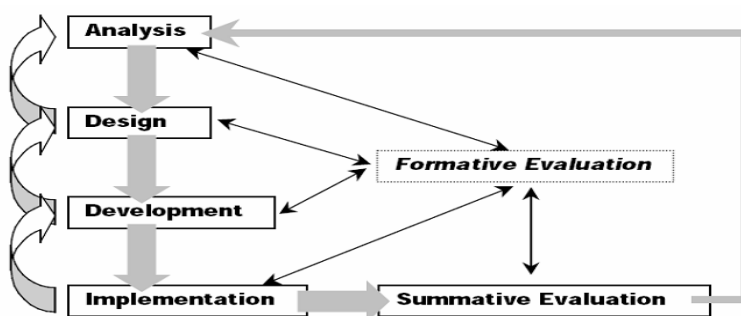

Diagram by: Steven J. McGriff, Instructional Systems, College of Education, Penn State University

Figure 2. The ADDIE Model

It is evident that the ADDIE Model represents a dynamic and flexible guideline for building effective training and performance support tools.

2.2 The MPC Model

This study took the ADDIE Model as the base to develop the MPC Model for tertiary EFL teacher in-service professional development. The MPC Model refers to the practice of peer coaching within a team teaching context, which can offer teachers more opportunities to support one another in their work. In the TEFL setting, this means that teachers may experience two layers of collaboration. The first layer is team teaching in which four teachers can be involved as a team so that common issues and problems will be discussed and solved by pooling the ideas of the team members. The second layer is peer coaching where two dyads will be formed within the team so that the two peer teachers in each dyad will work together to reflect on current practices, expand, refine, and build new skills, share ideas; teach each other; conduct classroom research; or solve problems in the workplace. The operation procedure of the MPC Model was shown in Figure 3 as follows:
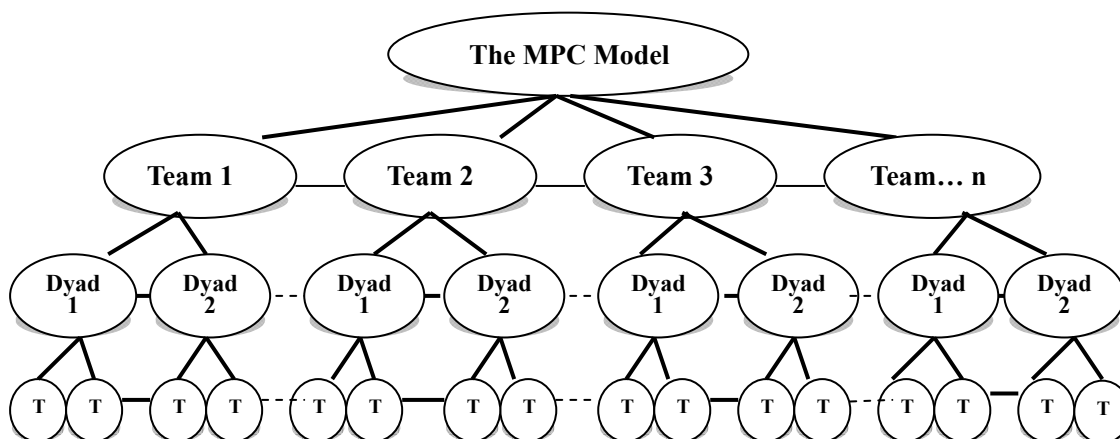

Figure 3. The Operation Procedure of the MPC Model

While developing the MPC Model, the researchers conceived its conceptual framework that was constructed to be correspondent with the phases of the ADDIE Model. The conceptual framework of the MPC Model was shown in Figure 4.
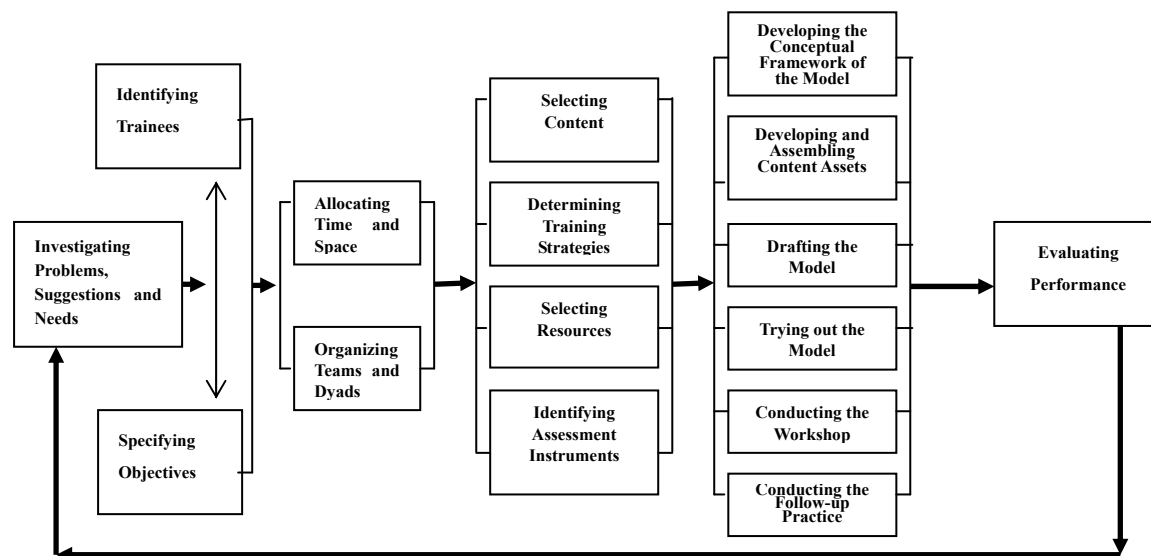

Figure 4. The Conceptual Framework of the MPC Model

In this study, the MPC Model was employed as a countermeasure to help solve the problems that tertiary EFL teachers have in their in-service professional development. After going through the steps in the designing phase and the developing phase accordingly, the implementation of this model was conducted mainly through the experiment including the workshop and the follow-up teaching practice, and the evaluation of this model included both formative and summative assessment.

3. Research Methodology

This study was made up of two phases: developing the MPC Model and evaluating the MPC Model for tertiary EFL teachers' in-service professional development. In Phase One, after the MPC Model had been designed, it was sent to some experts in educational research and TEFL fields to review and evaluate whether the model was appropriate to implement. In Phase two, some EFL teachers and students were selected to participate in the experiment to evaluate the MCP Model. The details were as follows:

3.1 Phase One: Developing the MPC Model for Tertiary EFL Teachers' In-Service Professional Development

3.1.1 Participants

Three experts in the fields of educational research and TEFL were selected by purposive sampling to review and evaluate the MPC Model. They are from one university in Thailand and two universities in China. Two of them are Ph.D degree holders and the other one is a full professor.

3.1.2 Instruments

An evaluation form of the MPC Model for the experts was constructed. Both Likert Scale and open-ended questions were involved in this form. The Likert Scale included 5 items on a five-point scale, namely, strongly agree, agree, uncertain, disagree, and strongly disagree, and the open-ended question part contained one question about the comments on the MPC Model.

3.1.3 Data Collection

The evaluation form was sent to the experts for evaluation before the researchers implemented the MPC Model for the training.

3.1.4 Data Analysis

Frequencies and content analysis were employed for the collected data. Frequencies were used for mean scores and standard deviation, and content analysis was used for the qualitative data from the open-ended questions. Then the MPC Model was improved based on the experts' comments and suggestions.

3.2 Phase Two: Evaluating the MPC Model for Tertiary EFL Teachers' In-Service Professional Development

3.2.1 Participants

There were two groups of participants in this study: the teacher participants and the student participants. They are from the School of Foreign Languages at Guiyang University in China, and were selected on the basis of purposiveness and availability.

12 EFL teachers participated in this study and were grouped into three teams with two dyads in each team based on the course type and the years of their teaching. The course was the "Comprehensive English Course" and the teacher participants had the teaching experiences from 2 years to 10 years.

105 students participating in this study were the second-year English major students who were instructed by the teachers using the MPC Model for their in-service professional development. They were in their intact classes.

3.2.2 Instruments

5 instruments were employed, including tests, observations, teacher's logs, researcher's field notes, and questionnaires.

Both pre-test and post-test were designed for evaluating the teacher participants' achievement of their professional knowledge and competence. There were two parts in the tests. The first part was the test of the knowledge of TEFL consisting of 35 multiple choice questions, and the second part was the test of knowledge related to the required teaching materials including 15 multiple choice questions. The testing objectives were set in line with the training objectives in the MPC Model. An item analysis was conducted with the help of Item Response Theory and IRT software program. The criteria used to select the test items were $0.3 \leq p \geq 0.7$, and the level of difficulty (p) and the discrimination power (r) were equal to or more than 0.2. The reliability of the tests was determined with the help of Kuder-Richardson' Formula (KR 20). The IRT software was used to analyze the reliability of the tests and they were accepted at $KR\ 20 \geq 0.7$.

Questionnaires consisted of three parts. The first part was the participants' personal information, the second was the agreement of statements, and the third part was open-ended questions. Internal consistency of the questionnaires was checked by utilizing 10 respondents for a pilot. The respondents' data were analyzed by the Coefficient of Cronbach's statistical technique with the help of the SPSS, a computerized software for social sciences.

3.2.3 Data Collection

In the implementation of the MPC Model, the data were collected from the experiment, which included a 3-day workshop and a 15-week follow-up teaching practice. The teacher participants were pre-tested before the experiment, and then, non-participant observation checklists were used to investigate the teachers' classroom activities and after-class cooperation, and the teacher's logs were adopted to record the procedure of the teacher participants' cooperation before, during, and after the classroom teaching. The researcher of this study wrote the field notes to record what she observed about the teachers' collaboration. And finally the teacher participants were post-tested, and a questionnaire was designed for the student participants to show their opinions on their teachers' instruction.

3.2.4 Data Analysis

In analyzing the data collected from different instruments, both quantitative and qualitative ways were used. On the one hand, the quantitative ways were for the data collected from questionnaires, tests, and observations. For the data from the closed-ended questions in questionnaires and the observation checklists, frequencies were used for the level of agreements in questionnaires and for the occurrences of a phenomenon in on-the-spot observations; for the data from the tests, paired-samples t-test was employed to find the difference between the pre-test and the post-test. On the other hand, the qualitative ways were for the data collected from the open-ended questions in the questionnaires, teacher's log, and researcher's field note, exactly, content analysis was used for analyzing these data.

4. Results

4.1 Developing the MPC Model for Tertiary EFL Teachers' In-Service Professional Development

The MPC Model was developed for tertiary EFL teachers to have their in-service professional development as an on-going and continuous process. The MPC Model took the ADDIE Model as the base and included five phases and 15 steps in the research procedure (See Figure 5).
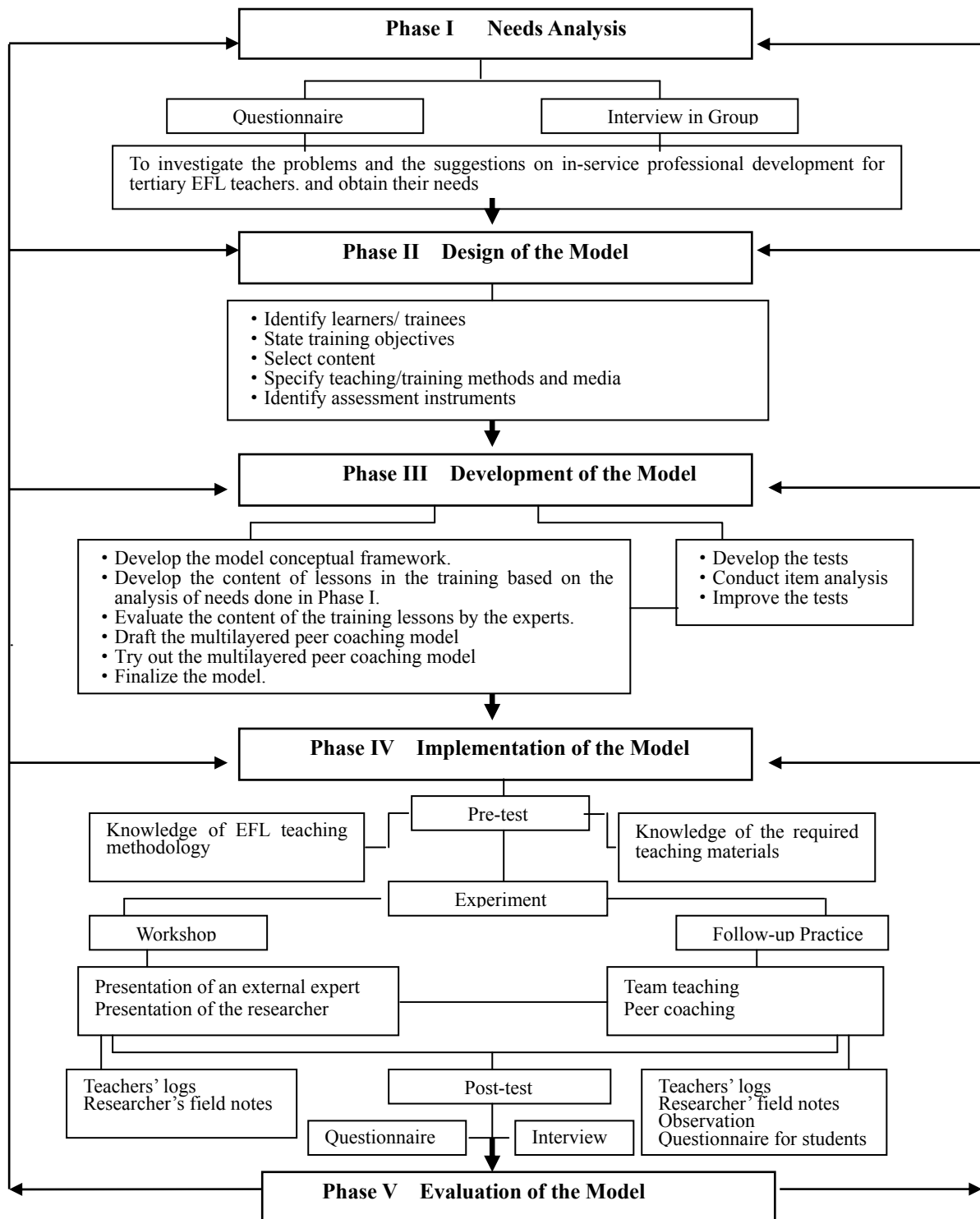
Phase I   Needs Analysis

Questionnaire	Interview in Group

To investigate the problems and the suggestions on in-service professional development for tertiary EFL teachers. and obtain their needs

Phase II   Design of the Model

- Identify learners/ trainees
- State training objectives
- Select content
- Specify teaching/training methods and media
- Identify assessment instruments

Phase III   Development of the Model

- Develop the model conceptual framework.
- Develop the content of lessons in the training based on the analysis of needs done in Phase I.
- Evaluate the content of the training lessons by the experts.
- Draft the multilayered peer coaching model
- Try out the multilayered peer coaching model
- Finalize the model.

- Develop the tests
- Conduct item analysis
- Improve the tests

Phase IV   Implementation of the Model

Knowledge of EFL teaching methodology

Pre-test

Knowledge of the required teaching materials

Experiment

Workshop

Follow-up Practice

Presentation of an external expert
Presentation of the researcher

Team teaching
Peer coaching

Teachers' logs
Researcher's field notes

Post-test

Teachers' logs
Researcher' field notes
Observation
Questionnaire for students

Questionnaire

Interview

Phase V   Evaluation of the Model

Figure 5. The MPC Model for Tertiary EFL Teacher In-service Professional Development

Phase I: Needs Analysis

A needs analysis is a systematic exploration of the way things are and the way they should be. Based on the purpose of this phase in this study, which was to investigate tertiary EFL teachers' in-service professional development problems, suggestions and needs, questionnaire and interview in group were used for the needs of the MPC Model for the tertiary EFL teacher in-service professional development. It was found that the tertiary EFL teacher needed the MPC Model (the detailed results from needs analysis were shown in another academic

paper by the same authors).

Phase II: Design of the model

The design phase was systematic and specific. The trainees were, first of all, identified; then training objectives were written, and the training environment was settled; after that, content for training was selected; and then training methods and media were specified; finally, assessment instruments were identified.

Phase III: Development of the model

To develop the MPC Model, several steps were followed. First, the EFL teacher multilayered peer coaching training conceptual framework was developed (See Figure 4). Second, the content of instruction was developed based on the analysis of needs done in Phase I. Third, the content of the training lessons was evaluated by the experts in the fields of educational research and TEFL. Fourth, the MPC Model was drafted. Fifth, the MPC Model was tried out. Sixth, the model was finalized. The in-service tertiary EFL teachers' feedback and suggestions were considered. To determine the efficiency of the MPC Model, the tests were designed. The pre-test and the post-test were constructed, the items of the tests were analyzed, improved and piloted.

Phase IV: Implementation of the model

This phase investigated the efficiency of the MPC Model by conducting the experiment. The procedure was taken like this: First, on the day before the experiment, the 12 teacher participants were pre-tested on their knowledge of TEFL and the knowledge of the required teaching materials. Second, the teachers received the training in the workshop by an external expert and the researcher. The workshop lasted for three days. The training started with a description of the training objectives. Then, the new concept and updated knowledge of TEFL, the collaborative approaches that the teachers could use for their work, etc., were presented by an external expert. After that, the MPC Model was introduced by the researcher. After the workshop, the teachers practiced the multilayered peer coaching in the intact classes for 15 weeks. Third, the teachers were grouped into three teams with two dyads in each. Four teachers in each team worked together for common issues and problems that were discussed and solved by pooling the ideas of the team members, and sat in the team members' class for co-teaching or evaluation. Then, two teachers in each dyad of the same team continued to work together to reflect on current practices, expand, refine, and build new skills, share ideas; teach each other; conduct classroom research; or solve problems in the workplace. During the process of the follow-up teaching practice, the teachers kept their logs, and the researcher observed the classroom teaching. Fourth, after each lesson, the teacher participants were asked to fill in the teachers' log to show their procedure and feedback. The feedback helped them to reflect their own opinions about the training lessons, how to keep up with the updated knowledge of TEFL, and how to make their own in-service professional development sustainable. Meanwhile, the researcher kept her field notes after each lesson. Fifth, after the training in the workshop and the practice in the follow-up teaching, a post-test was given to the teachers. Sixth, the questionnaire was conducted to find out the students' opinions on the instruction given by the teachers involved in the MPC Model.

Phase V: Evaluation of the model

This phase measured the effectiveness of the MPC Model for tertiary EFL teacher in-service professional development. Throughout the entire instruction design process, whether within phases, or between phases, or after the implementation, the evaluation was conducted. Starting with investigating the needs for this MPC Model, the evaluation was carried out by determining the design of instruction, observing the training instruction and the practice of this model, investigating the teachers' achievement in their in-service professional development, investigating the teacher's attitudes towards the multilayered peer coaching practice and the students' opinions on the instruction guided by the MPC Model.

To sum up, the MPC Model provided tertiary EFL teachers with the platform to have their in-service professional development in a sustainable way. As a trainee-centered model, the MPC Model laid emphasis on the real demands of the trainees and their cooperation in their daily work.

4.2 Results of the Experts' Evaluation on the MPC Model for Tertiary EFL Teachers' In-Service Professional Development

After the MPC Model was developed, the researcher took it together with the evaluation form to three experts in the educational research area and the TEFL field for evaluation (See Table 1).

Table 1. The results of experts' evaluation on the MPC Model

Statements	$\bar{x}$	SD
1. Each component in the multilayered peer coaching model has clear function and connection to the overall system	5.00	0.00
2. The 5 steps or phases of the multilayered peer coaching model: Analysis, Design, Development, Implementation, and Evaluation are clear and easy to be implemented in developing this model for tertiary EFL teacher in-service professional development.	4.67	0.58
3. The multilayered peer coaching model is appropriate for the tertiary EFL teachers to have their in-service professional development.	5.00	0.00
4. The multilayered peer coaching model is appropriate to be used in training and/or learning for the tertiary EFL teachers to update their professional knowledge and competence.	4.67	0.58
5. The multilayered peer coaching model has sufficient flexibility to be effective in continuing the tertiary EFL teacher in-service professional development.	5.00	0.00
Total	4.87	0.23

The results revealed that three items (No.1, 3.and 5) were strongly agreed by the experts with the mean scores of 5.00 and standard deviation of 0.00, which indicated that the MPC Model's components had clear functions, and it is appropriate for tertiary EFL teachers to have in-service professional development, and flexible enough for them to continue their in-service professional development. Two items (No.2 and 4) were agreed by the experts with the mean scores of 4.67 and standard deviation of 0.58 that the MPC Model had clear and easy phases to follow, and is appropriate to be used for updating the EFL teachers' professional knowledge and competence. Thus, the results presented in Table 1 showed the experts' positive evaluation on the MPC Model.

4.3 Results of the Effects on the MPC Model for Tertiary EFL Teachers' In-Service Professional Development

4.3.1 Results from the Tests

Table 2. The teachers' achievement on professional knowledge and competence

		Paired Samples Statistics		
	Mean	N	Std. Deviation	Std. Error Mean
Pre-test	56.83	12	18.771	5.419
Post-test	70.50	12	17.059	4.924

Table 2 showed that the teacher participants received higher mean scores after implementing the MPC Model for their in-service professional development. In addition, to examine whether their professional knowledge and competence increased significantly, the pre-test and post-test scores were compared and calculated in Table 3.

Table 3. The statistical difference between pre-test and post-test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-test Post-test	-13.667	3.284	.948	-15.754	-11.580	-11.414	11	.000

As shown in Table 3, there was a significant difference between the teachers' pre-test and post-test scores of their professional knowledge and competence at the level of 0.000 of significance (p<0.05). This indicated that the teachers gained more professional knowledge and competence after implementing the MPC Model. Therefore, it

could be stated that the MPC Model helped the teachers to improve markedly their professional knowledge and competence for their in-service professional development.

4.3.2 Results from the Observations

In the experiment, the researcher observed each of the teacher participants' classroom teaching for 15 hours. The observation purpose was to see if the teachers could go through the teaching procedure completely and smoothly, and what steps were more frequently or less frequently taken in the procedure. Seven steps in the teaching procedure were observed, namely, *preview, teacher's presentation, question and answer, discussion, other activities, summary* and *assignmen*t. While observing the classroom teaching, the researcher filled out the observation checklist. The results of the observation checklist were presented as follows:

Table 4. The results of observation checklist for teaching procedure

Teacher	Preview	Teacher's presentation	Q&A	Observation Items Discussion	Other activities	Summary	Assignment
T1	15	15	15	12	5	15	15
T2	15	15	15	11	5	15	15
T3	15	15	15	9	6	15	15
T4	15	15	15	10	4	15	15
T5	15	15	15	8	5	15	15
T6	15	15	15	13	6	15	15
T7	15	15	15	11	7	15	15
T8	15	15	15	12	4	15	15
T9	15	15	15	10	5	15	15
T10	15	15	15	8	6	15	15
T11	15	15	15	9	7	15	15
T12	15	15	15	8	5	15	15
Mean	15.00	15.00	15.00	10.08	5.42	15.00	15.00
SD	0.00	0.00	0.00	1.73	0.99	0.00	0.00

As shown in Table 4, the teacher participants went through the teaching procedure completely and smoothly. The main steps including *preview, teacher's presentation, questions and answers, summary,* and *assignment* were completed in each period for 15 weeks with the mean scores of 15.00. The *preview* usually took place at the beginning during a period each time followed by the *teachers' presentations*. During the step of the presentation, new information and knowledge were delivered, and the teachers have done their presentations with different strategies each time. The step of *questions and answers* was also employed in classroom teaching in each period after the presentation in most cases, and within other steps in some cases as well. The teachers always asked the questions and often obtained the response from the students. Likewise, *summary* and *assignment* were made in the classroom teaching in each period. So these five main steps were more frequently used. Regarding the other two steps: *discussion* and *other activities*, the teachers were less frequently used with the mean scores of 10.08 and 5.42 respectively. For the *discussion*, it was found that the teacher could not do it in each period, and for the *other activities*, the teacher only used them in response to some unworkable activities. These seven steps formed a cycle to complete a whole period of classroom teaching. The time allotment for each step was generally accepted and utilized well by the teacher participants. The results indicated that the MPC Model contributed to the improvement of the teacher participants' teaching ability.

4.3.3 Results from the Teacher's Logs

The results from the teacher's logs showed that the teacher participants kept their logs in two phases: the classroom teaching and the after-class cooperation. By grouping the collected data into "what did they do" and "how did they feel", both the similarities and differences were found in the logs respectively.

In "what did they do", it was found that in the classroom teaching, all teachers shared similar main teaching steps with similar time allotment, and laid more emphasis on the interactions. However, they used different teaching aids for the same purpose, and showed their different focuses in each step. In the after-class cooperation, the two teachers in each dyad had the cooperation mainly concerning four parts: teaching planning, material analyzing, students' problems, and classroom research; the four teachers in each team worked together for two purposes: the problems that the peer teachers could not solve and the topics of classroom research. However, the two teachers

in each dyad had their own cooperation focus.

In "how did they feel", the data were grouped into "helpfulness" and "frustration". The teachers thought that the classroom teaching with the help of the MPC Model was more helpful because they had a better understanding of the teaching purposes, a better implementation of the teaching methods, a more systematic teaching, and a more interactive classroom; they could arouse the students' interest in English, and could answer the students' questions more quickly. As one of them put, "…*the teaching in class now is more well-designed, orderly, and well-implemented*." However, their frustration was that sometimes the needs of the top students and the slow students could not be satisfied in class at the same time. In after-class cooperation, the helpful aspects mainly included: they felt much stronger in classroom teaching, more mature academically, more effective in their professional development, more confident mentally, and happier. However, the teachers were also frustrated in such aspects: the equipment used for teaching was still not enough; and the academic resources in the library for the teachers to prepare their lessons or update their knowledge were still limited. So the results revealed that the teachers' cooperation both in class and after class with the help of the MPC Model contributed greatly to their professional development.

4.3.4 Results from the Researcher's Field Notes

The researcher joined in the dyads and the teams in turn each week, and found that the teachers' cooperation both in class and after class shared similarity and differences. The results were presented as follows:

Regarding the similarities, it was found that in classroom teaching by these six dyads, the teaching steps went completely and smoothly from *preview, teacher's presentation, questions and answers, summary* and *assignment*, and *discussion* and *other activities* were sometimes carried out in between. Certain content in the textbook was taught by one of the two teachers who was better at teaching this skill, the other teacher sat in the classroom for observation. The two teachers answered the students' questions in class sometimes in turn and sometimes at the same time. The simultaneous participation of the two teachers in class led to a more interactive and practice-based English class. In the after-class cooperation, the teachers' cooperation was generally practical and pleasant. The cooperation within a dyad was mainly for the detailed issues on teaching preparation, classroom teaching, and the research on the classroom teaching, and the cooperation within a team was mainly for the problems that a dyad failed to solve, and the discussion for the classroom research.

Regarding the differences, it was found that in classroom teaching different dyads had their own characteristics, they had different strategies for their presentation in class, they had their own supplementary materials for students' further study, and they faced different problems from the students. In after-class cooperation, different dyads had their own focus on their research related to the classroom teaching. Some dyads presented the lesson only by the teachers themselves, while others involved the students in their presentation. The two teachers in some dyads could agree with each other easily while those in others had to negotiate to reach the agreement. Different dyads preferred to design the teaching tasks based on different TEFL perspectives and methods. Therefore, the results revealed that the teachers' cooperation in the MPC Model was improving the teachers' professional knowledge and teaching ability.

4.3.5 Results from the Students' Questionnaire

Table 5. The results of students' opinions on the MPC Model

Statements	$\bar{x}$	SD
No. 1	4.70	0.57
No. 2	4.86	0.35
No. 3	4.48	0.66
No. 4	4.86	0.35
No. 5	4.75	0.49
No. 6	4.67	0.64
No. 7	4.86	0.35
No. 8	4.58	0.64
No. 9	4.86	0.35
No. 10	4.95	0.21
Total	4.75	0.46

According to Table 5, the results showed that the opinions rated by the 105 student participants were mainly grouped into two item categories: "teaching" and "teachers." Items No. 1, 2, 3, 4 referred to "teaching." With the mean scores of 4.70, 4.86, 4.48, 4.86 and the standard deviation of 0.57, 0.36, 0.66, and 0.36, these items showed the students' agreement that co-teaching offers more opportunities for classroom communication in English and allowed each teacher to teach his or her specialized topic in class, and such English classes were more interesting and motivating, and what's more, co-teaching could make both teachers and students happy. Meanwhile, items No. 5, 6, 7, 8, 9, and 10 were about "teachers." With the mean scores of 4.75, 4.67, 4.86, 4.58, 4.86, 4.95 and the standard deviation of 0.49, 0.64, 0.35, 0.64, 0.35, and 0.21 respectively, these items indicated that the students agreed that English teachers in the MPC Model could answer the students' questions much more quickly, teach at the pace as planned, teach in a different but better way, help the students with their difficulties in class, and young teachers could offer more detailed explanation in class. Likewise, the students could get more help from the peer or team teachers with their English learning.

The responses to the open-ended questions presented quite similar results in terms of their teachers' improvement of instruction, which illustrated the students' positive opinions on the MPC Model.

To sum up, the results in this study revealed that the MPC Model was effective through the triangulation of both quantitative and qualitative data collection and analysis.

5. Discussions and Conclusions

5.1 Discussions

Based on the results, the effectiveness of the MPC Model for the EFL teachers' in-service professional development was discussed from the following three aspects:

5.1.1 The Improvement of the Teachers' Professional Knowledge and Competence

The results from the pre-test (Mean = 56.83) and the post-test (Mean = 70.50) showed that the teachers' professional knowledge and competence increased. This happened because the MPC Model was implemented all the way through the workshop and the following-up teaching practice. The teacher participants were firstly given the lectures about the new information and knowledge in TEFL in the workshop and then they put them into practice in the following-up teaching. The classroom teaching and the after-class cooperation in the MPC Model led the teachers to the cooperation in their daily work. In doing so, more exposure to the discussion of their teaching and classroom research contributed a lot to the improvement of their professional knowledge and competence, and finally to their in-service professional development. The result of this study was quite similar with some other previous studies, for example, Mishra (2002) argued that in teacher development, knowledge is negotiated and achieved through collaborative work. Wagnar and Leydesdorff (2005) also stated that teams that work collaboratively can obtain greater resources. Similarly, according to the constructivist perspective, learning activities in constructivist settings were characterized by active engagement, inquiry, problem solving, and collaboration with others. Meanwhile, Vygotsky's theory of social constructivism also emphasized the interaction of learners with others in cognitive development (Hedegaard, 1998). Therefore, the results of the tests implied the effectiveness of the MPC Model.

5.1.2 The Benefits from the Teachers' Cooperation in the MPC Model

The results also revealed that both teachers and students benefited from the teachers' cooperation in the MPC Model. This happened because with the help of the MPC Model the teachers could prepare and present their lessons much better, and the students could get more help and quicker feedback in their English learning. This was in line with some previous studies. Goetz (2000) identified the benefits of team teaching for both teachers and learners. For teachers, team teaching is an effective way to learn new teaching skills and can often contribute to professional development. For learners, the cooperation observed between teachers can serve as an example of teamwork and communication. Likewise, Wadkins et al (2006) claimed that one of the benefits that team teaching offers students is an increase in the amount of feedback they receive from instructors. More importantly, a collaborative teaching environment invites students to take a more active role in the learning process. Because team teaching encourages a variety of perspectives on a topic, students are more likely to feel they can make valuable contributions to class discussions (Anderson & Speck, 1998). It has been documented extensively that teacher collaboration is a necessary element for improved student achievement and ongoing school success (DelliCarpini, 2008). So while the teachers benefited from the cooperation in the MPC Model, the students' learning outcomes are improved by offering increased student-teacher interaction as well as multi-dimensional approach to subject matter (Leavitt, 2006).

5.1.3 The Continuity of the Teachers' In-Service Professional Development in the MPC Model

The results revealed that the problem that the tertiary EFL teachers failed to continue their in-service professional development was solved by applying the MPC Model. This happened because this model could put the teachers' in-service professional development into their daily teaching in a cooperative way. Some other researchers also shared the similar view. Dove and Honigsfeld (2010) pointed out that when teachers engage in collaborative practices, they experience a reduction in isolation, enjoy more occasions to share their expertise, and appreciate the opportunity to shape the way the ESL/EFL program operates in their schools. The teachers in such a context were willing to continue their in-service professional development. According to Leavitt (2006), everyone on the team has to be behind every element of the course, while reaching this consensus may take a lot of time and compromise, in the end the extra effort will result in a far more successful intellectual experience. Such a process led to the continuity of the teachers' cooperation for their professional development, therefore, sustained collaborative practices not only create a model of teacher support for the novices, they may also lead to teacher leadership development for more experienced faculty (Donaldson, 2001; Lieberman et al, 2006).

5.2 Conclusions

This study has been conducted for solving the problems of tertiary EFL teachers' in-service professional development by developing and evaluating the MPC Model. The results revealed that the MPC Model was appropriate and effective for the tertiary EFL teachers to have their in-service professional development. Both teachers and students benefited from this model with the teachers' improvement of their professional knowledge and competence and the students' interest in English learning. Furthermore, further research can be conducted for evaluating the students' achievement in their English language learning with the help of the teachers who make use of the MPC Model for their in-service professional development.

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