THE DEVELOPMENT OF A TEACHER-TRAINING FOR MODEL IN USING THE INTERNET FOR TEACHING ENGLISH AS A FOREIGN LANGUAGE

Sudsuang Yutdhana

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การพัฒนารูปแบบการฝึกอบรมครูในการใช้อินเทอร์เน็ต เพื่อการสอนภาษาอังกฤษเป็นภาษาต่างประเทศ

นางสาวสุดสรวง ยุทธนา

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรดุษฎีบัณฑิต
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Suranaree University of Technology has approved this thesis submitted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

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CURRICULUM VITAE

Sudsuang Yutdhana was born in Songkhla. She obtained her B.A. (Hon.) in Business English from Yonok College in 1995, M.A. in English from Naresuan University in 2000, M.A. in Literacy Education from Washington State University, Pullman, Washington, in 2005. Her research interest is computer-assisted language learning (CALL). After graduation, she will join the Department of Western Languages, Faculty of Humanities, Naresuan University, Phitsanulok.

สุดสรวง ยุทธนา : การพัฒนารูปแบบการฝึกอบรมครูในการใช้อินเทอร์เน็ตเพื่อการสอนภาษาอังกฤษเป็นภาษาต่างประเทศ (A DEVELOPMENT OF A TEACHER-TRAINING MODEL IN USING THE INTERNET FOR TEACHING ENGLISH AS A FOREIGN LANGUAGE) อาจารย์ที่ปรึกษา : ผู้ช่วยศาสตราจารย์ ดร.ศิริลักษณ์ อุสาหะ, 160 หน้า. ISBN 974-533-570-3

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อ 1) ศึกษาสภาพการใช้อินเทอร์เน็ตในการสอนภาษาอังกฤษของครูระดับมัธยมศึกษา และความต้องการในการฝึกอบรม 2) เพื่อออกแบบและพัฒนารูปแบบการฝึกอบรมครูภาษาอังกฤษสำหรับใช้อินเทอร์เน็ตเพื่อการสอนวิชาภาษาอังกฤษเป็นภาษาต่างประเทศ 3) เพื่อทดลองใช้รูปแบบการฝึกอบรมครูภาษาอังกฤษสำหรับใช้อินเทอร์เน็ตเพื่อการสอนวิชาภาษาอังกฤษเป็นภาษาต่างประเทศ และ 4) เพื่อประเมินผลรูปแบบการฝึกอบรมครูภาษาอังกฤษสำหรับใช้อินเทอร์เน็ตเพื่อการสอนวิชาภาษาอังกฤษเป็นภาษาต่างประเทศ การวิจัยนี้ประกอบด้วย 4 ขั้นตอนที่สำคัญ ได้แก่ 1) การศึกษาสภาพ 2) การพัฒนารูปแบบการฝึกอบรม 3) การทดลองใช้รูปแบบการฝึกอบรม และ 4) การประเมินผลรูปแบบการฝึกอบรม กลุ่มตัวอย่างในการวิจัยประกอบด้วย กลุ่มครูผู้สอนภาษาอังกฤษจากโรงเรียนมัธยมศึกษาในประเทศไทย จำนวน 100 คน ผู้เชี่ยวชาญทางด้านการออกแบบการสอน ด้านเทคโนโลยีเพื่อการศึกษา และด้านการสอนภาษาอังกฤษเป็นภาษาต่างประเทศ จำนวน 9 คน และครูผู้สอนภาษาอังกฤษจำนวน 16 คน ในโรงเรียนเฉลิมขวัญสตรี จังหวัดพิษณุโลก เครื่องมือที่ใช้ในการวิจัย ประกอบด้วย 1) แบบสอบถามก่อนการออกแบบ 2) แบบประเมินโมเดล 3) แบบสอบถามก่อนการทดลอง 4) แบบสอบถามหลังการทดลอง และ 5) แบบประเมินชิ้นงานของผู้เข้าอบรม ข้อมูลในการวิจัยแบ่งเป็น 2 ชนิด คือ ข้อมูลเชิงปริมาณ และข้อมูลเชิงคุณลักษณะ ข้อมูลเชิงปริมาณได้รับการวิเคราะห์ทางสถิติเชิงพรรณนา คือ ค่าเฉลี่ย ค่าเบี่ยงเบนมาตรฐาน ค่าความถี่ และร้อยละ ส่วนข้อมูลเชิงคุณลักษณะได้รับการวิเคราะห์เชิงพรรณนา

ผลการศึกษาที่สำคัญ พบว่า

1. ครูผู้สอนวิชาภาษาอังกฤษในประเทศไทยใช้อินเทอร์เน็ตในบางโอกาส ทั้งนี้ ครูมีความคิดเห็นต่อการใช้อินเทอร์เน็ตในการสอนวิชาภาษาอังกฤษในเชิงบวก อย่างไรก็ตาม ครูมีปัญหาและความกังวลใจในเรื่องของคุณภาพของคอมพิวเตอร์และการเชื่อมต่ออินเทอร์เน็ต และการขาดความรู้ในการใช้อินเทอร์เน็ตเพื่อการสอน ดังนั้น จึงต้องการที่จะเรียนรู้วิธีการสร้างกิจกรรมการเรียนการสอนแบบออนไลน์ และการสืบค้นและรวบรวมข้อมูลจากเว็บไซต์ทางด้านการสอนภาษาอังกฤษ

2. รูปแบบการอบรมครูภาษาอังกฤษสำหรับใช้อินเทอร์เน็ตเพื่อการสอนภาษาอังกฤษเป็นภาษาต่างประเทศประกอบด้วยปัจจัย 5 ประการ ได้แก่ สถาบันฝึกอบรม, ความพร้อมของคอมพิวเตอร์และอินเทอร์เน็ต, ผู้ฝึกอบรม, ผู้เข้ารับการฝึกอบรม, และเนื้อหาของการฝึกอบรม ทั้งนี้ รูปแบบการฝึกอบรมประกอบด้วยขั้นตอนหลัก 8 ขั้นตอนได้แก่ การวิเคราะห์สถานการณ์, การออกแบบรูปแบบการฝึกอบรม, การสร้างชุดฝึกอบรม, การทดลองใช้ชุดฝึกอบรม, การใช้งานชุดฝึกอบรมจริง, การประเมินชิ้นงาน, การประเมินรูปแบบ, และการปรับปรุงรูปแบบ

3. หลังจากการทดลองใช้รูปแบบการฝึกอบรม พบว่ารูปแบบการฝึกอบรมส่งผลกระทบต่อการใช้อินเทอร์เน็ตของครูดังนี้ ประการที่หนึ่งหลังจากการอบรม ผู้เข้ารับการฝึกอบรมใช้อินเทอร์เน็ตที่บ้านและที่อื่นๆ เช่น ร้านบริการอินเทอร์เน็ต และห้องสมุดของโรงเรียน มากกว่าก่อนเข้ารับการอบรม ประการที่สองหลังจากการฝึกอบรม ผู้เข้ารับการฝึกอบรมใช้อินเทอร์เน็ตเพื่อวัตถุประสงค์ทางการศึกษามากขึ้น ประการที่สามผู้เข้ารับการฝึกอบรมมีแนวความคิดที่ดีต่อการใช้อินเทอร์เน็ตเพื่อการสอน ประการที่สี่หลังจากเข้ารับการฝึกอบรม ผู้เข้ารับการฝึกอบรมไม่มีความกังวลในเรื่องของการขาดความรู้ในการใช้อินเทอร์เน็ตเพื่อการสอน ซึ่งพบว่าเป็นความกังวลหลักประการหนึ่งในการสำรวจก่อนการฝึกอบรม และประการสุดท้ายหลังจากการฝึกอบรม ผู้เข้ารับการฝึกอบรมพบว่า ตนเองมีทักษะในการใช้อินเทอร์เน็ตเพื่อการสอนดีขึ้น

4. ผู้เชี่ยวชาญประเมินว่า รูปแบบการสอนที่พัฒนาขึ้นสามารถทำงานได้อย่างมีประสิทธิภาพ และระบุปัจจัยของการฝึกอบรมครบถ้วนและชัดเจน

สาขาวิชาภาษาอังกฤษ ลายมือชื่อนักศึกษา_____

ปีการศึกษา 2548 ลายมือชื่ออาจารย์ที่ปรึกษา_____

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม _____

SUDSUANG YUTDHANA : THE DEVELOPMENT OF A TEACHER-TRAINING MODEL IN USING THE INTERNET FOR TEACHING ENGLISH AS A FOREIGN LANGUAGE THESIS ADVISOR : ASST. PROF. SIRILUCK USAHA, Ph.D.160 PP. ISBN 974-533-570-3

TEACHER TRAINING/TECHNOLOGY TRAINING/TRAINING MODEL/ THE INTERNET FOR TEFL

The purposes of the present study were 1) to study the context of EFL secondary school teachers' use of the Internet for their instruction and needs for training, 2) to design and develop a teacher-training model to enhance an instructor's use of the Internet in TEFL, 3) to implement the teacher-training model to enhance an instructor's use of the Internet in TEFL, and 4) to evaluate the teacher-training model to enhance an instructor's use of the Internet for TEFL. In order to achieve the purposes, four phases of context analyses, a model development, a model implementation, and a model evaluation were conducted. The sample comprised of 1) 100 EFL secondary school teachers from large-size schools in the provincial cities with at least one university, 2) nine experts in teacher-training in technology, instructional design, and TEFL, and 3) 16 EFL teachers from Chalermkwanstree School in Phitsanulok. Five research instruments were used for data collection: a pre-design questionnaire, a model evaluation form, a pre-implementation questionnaire, a post-implementation questionnaire, and an output evaluation form. The quantitative data obtained were analyzed using descriptive statistics including mean, standard deviation, frequency, and percentage. The qualitative data were coded with keywords, categorized, and finally the frequencies of each category counted.

The research findings were as follows:

1. Thai EFL teachers occasionally used the Internet. They had positive opinions towards using this technology though with some reservations about infrastructure and lack of knowledge in Internet use. Among the needs for training, two most immediate were 'creating online activities' and 'gathering information from EFL web sites.'

2. The teacher-training model in using the Internet for TEFL consisted of five factors: 1) training institutes, 2) availability in computers and the Internet access, 3) trainers, 4) trainees, and 5) training content. There are eight key steps of the model: 1) context analyses, 2) model's design, 3) the creation of training package, 4) the pilot of training package, 5) the implementation of training package, 6) the output evaluation, 7) the model's evaluation, and 8) the model's revision.

3. After the implementation, the model affected the teachers' use of the Internet in various aspects. First of all, after the training, the trainees used the Internet at home and other places such as Internet cafés and the school library more than they had done before the training. Second, after the training, they used the Internet more for most of the educational purposes. Third, the trainees had positive opinions towards using the Internet for TEFL. Fourth, after the training, one of their highest reservations before training, a lack of knowledge, was not found. Finally, the trainees perceived that their skills in using the Internet for TEFL were improved.

4. The experts evaluated that the model worked effectively with all essential training factors clearly identified.

School of English

Academic Year 2005

Student's Signature_____

Advisor's Signature_____

Co-advisor's Signature_____

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I owe deepest thanks to teachers at Chalermkwansatree School, Phitsanulok. This thesis could not have been accomplished without their attention, patience, hard

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Sudsuang Yutdhana

CHAPTER 1

INTRODUCTION

This study attempted to design, develop, implement, and evaluate a teacher-training model to enhance the instructor's use of the Internet in TEFL. This chapter contains the rationale of the study, statement of problem, the purpose of the study and the research questions, the research assumptions, the limitations of the study, and the significance of the study.

1.1 Rationale of the Study

Over the past few years, the Internet has emerged as a prominent new technology (Singhal, 1997). The influence of such a powerful technological tool has pervaded all aspects of the educational, business and economic sectors of our world. Because the use of the Internet is widespread in numerous fields and domains, without a doubt, it also carries great potential for educational use. Douglas (2000) asserts that the lives and work of nearly all language teachers are now affected in some way or another by technologies such as computers, video, telecommunications, and the Internet. Kern and Warschauer (2000) noted that computers can play multiple roles in language teaching. Language drills and skill practices can be prepared or practiced on personal computers. The advent of multimedia technology on the personal computer has enabled it to serve as digital space in which to explore and creatively influence a micro world. Moreover, with the development of computer networks, it serves as a medium of/for local or global

communication and a source of authentic materials. Therefore, computer-assisted language learning (CALL) is no longer limited to interaction with computers or with other students (Chapelle, 2001). The students can communicate with learners in other parts of the world or spend time in computer-mediated communication (CMC) for language learning (Warschauer, 1995a, 1995b).

Likely, the learning environment in Thailand has changed due to the impact of technology. The Internet has become a new source of information for students. Moreover, students tend to spend many hours a day using the Internet for playing games, chatting and finding information (Maneekhao, 2001). Computers and the Internet, therefore, can be a tool to hold students' attention for long periods in a normal class. As the learning environment is changing, the role of the teacher also needs to change (Orlich et al., 1998). Teachers should not only use a textbook, a marker and a white-board, but also the Internet effectively. Some teachers can use a computer to type lessons, to prepare examinations, or even to send mails to friends, but they never use it as a resource or a tool for teaching (Maneekhao, 2001). So, it should be advantageous for them to learn how to use the Internet for their teaching.

Currently, there are many programs all over the world providing technology courses for both pre-service and in-service teacher training. However, much of the research on teacher education in technology use shows that teacher-education technology courses and programs have a limited impact on how teachers think about and implement technology-supported teaching (Cuban, 1996; Feiman-Nemser and Remillard, 1996). After finishing coursework, teachers still have no idea of how to make use of the technological potential for their real context. This might be because they will not learn to use technology unless they seriously need to use it (Galloway, 1996; Smerdon et al.,

2000). It might be that what teachers are learning in coursework might not be what they need or perceive they need to know.

There are also many factors in teacher education in technology use. These range from pressure to use it to opportunities to learn new skills (see Debski, 2000), pre-service use, perception of the usefulness of technology for teaching, overcoming technology-related anxiety (Knezek, Christensen, and Rise, 1996), teachers' confidence and positive opinions towards technology (Fisher, 1999; and Lam, 2000), and the availability of computers at home (Yildirim, 2000). In the review by Egbert, Paulus, and Nakamichi (2002), barriers preventing technology use include time limitations both outside and during class (Lam, 2000; Levy, 1997a; Reed et al., 2000; Strudler, Quinn, McKinney, and Jones, 1995), lack of resources and materials (Loehr, 1996; Smerdon et al., 2000), insufficient or inflexible guidelines, standards, and curricula (Langone et al, 1998), lack of support or recognition for integrating computers (Grau, 1996; Strudler, McKunney, and Jones, 1999), a clash between new technologies at universities and older ones in schools, lack of leadership (Smerdon et al., 2000), inadequate training and technical support (Abdal-Haqq, 1995; Lam, 2000; Langone et al., 1998; Levy, 1997a; Smerdon et al., 2000), age, gender opinions toward technology, teaching experience (Lam, 2000), and the rate of technological change (levy, 1997a). All of the problems and barriers mentioned above are challenges for a course designer and a course instructor/trainer.

In the context of Thailand, the Ministry of Education in cooperation with The National Electronics and Computer Technology Center (NECTEC) has been organizing teacher-training courses to enhance Thai teachers' knowledge of information technology (Kiattananan and Koanantakool, 2003). The introductory training course for the Internet was initiated for schools in Bangkok and expanded to many provinces in Thailand with

the cooperation of Rajabhat Institutes under the project called SchoolNet@1509 (Kiattananan and Koanantakool, 2003). However, the course provided by the ministry and NECTEC for in-service teacher training cannot guarantee the teachers use of computers in their real instruction. That might be because the training course is an introductory training designed to train computer literacy rather than allowing teachers to integrate technology to the content of a subject they teach. Moreover, each training course is broadly designed for the teachers from various fields of teaching such as mathematics, sciences, Thai, and English.

The Thai government cooperates not only with national organizations but also with international organizations, that is, UNESCO Asia and Pacific Regional Bureau for Education in Asia-Pacific. With UNESCO, the National Information Technology Committee Secretariat set up Thailand IT policy and ICT plan in 2001 in order to develop people's ability to integrate and apply technologies for their work and education (UNESCO, 2003). Moreover, to serve the IT policy and ICT policy, Rajabhat Institutes with the cooperation of NetOne Network Solution Co., Ltd. created a pilot project of teaching training through electronic learning (Daily Matichon, 2003). This project aims to train school teachers all over Thailand by using an online system. The content of the project embraces computer literacy and the idea of electronic learning (e-learning). The training centers are located in eight campuses of Rajabhat Institutes in different parts of the country. Even a training program given by JICA tends to focus on Linux applications and installing and configuring Linux (UNESCO, 2003). The Ministry of Education has also been working on the Labschool.net project aiming to train teachers to incorporate e-learning into their instruction. However, only a few schools in each province have been selected to join the project. Furthermore, only M.1-M.3 courses have been used

in the training project.

All of those training courses mentioned above reflect that training programs existing in Thailand do not cover teachers' needs. It is interesting that the training programs mainly focused on training teachers in how to use a computer and the Internet without specific focus on a subject area such as mathematics, Thai, English, and others.

The training designed specifically for the English language teachers was organized by King Mongkut's University of Technology, Thonburi (Maneekhao, 2001). Actually, this training is one session of a five-day workshop entitled 'Issues on Teacher Development' held for English teachers from 19 secondary schools in Bangkok. The session entitled 'Learning and Teaching English via the Internet' was a three-hour training session organized on the third day of the workshop. As development is a long-term process and cannot be attained easily, the participants of this workshop might not continue using the Internet (Maneekhao, 2001).

1.2 Statement of the Problem

There are two reasons why technology should be an integral part of teacher training. First, many computer applications, especially asynchronous computer-mediated communication (e.g., e-mail, electronic bulletin boards), promote interactive learning, which is central to the professional development of future and current educators. Electronic discussion boards provide an interactive venue where new and future teachers can reflect, evaluate, solve problems or simply exchange ideas (Bonk et al., 1996; DeWert et al., 2003; Kumari, 2001; Liou, 2001; Mitchell, 2003; Pawan et al., 2003).

Second, research in teacher technology use shows that pre-service teachers gain confidence in the use of technology through formal teacher-education

coursework (Knezek, Christensen, and Rice, 1996) and that their attitudes towards computers improve through such coursework (Lam, 2000). Little empirical research has been conducted on language teachers' professional development in using computers. Studies have found, though, that "teachers who spent more time in professional development activities were generally more likely … to indicate they felt well prepared" to teach with technology (Smerdon et al., 2000, p. iv). However, some researchers have found that "…coursework seems to have little or no impact on teacher-education students' beliefs about their abilities or use of what they have learned in their teaching" (Egbert, Paulus, and Nakamichi, 2000, p. 110). In other words, it cannot guarantee that teachers who have learned how to use technology can integrate technology to enhance their teaching and their students' learning. Therefore, what teachers perceive to have learned in a technology course might not be what they need or perceive they need to know.

Hence, an isolated course in computer-assisted language leaning (CALL) is, in reality, the development of a sequence of situated technology experiences for teachers. This is still a challenge for a course designer to develop coursework or a training course to practically enhance EFL teachers' ability to use the Internet for their teaching.

For Thailand and other countries in the region, many teacher-training programs have been organized. UNESCO, which is one of the most powerful organizations, has provided two significant projects. The first project was initiated in 2003. It was an experts' meeting on teacher training in technology-pedagogy integration. Launching this project into action, the Expert's Meeting reviewed the regional/international situation and existing resources, identified priorities and strategies according to the specific needs of the countries, while formulating

guidelines and a conceptual framework for infusing technology within the training modules and educational software that will be developed. Recently, UNESCO Asia and Pacific Regional Bureau for Education in Bangkok announced that by 2008, all regional Member States will be in a position to offer teachers an education on how and when to best use technologies for teaching and learning through training which is integrated in all national pre-service teacher training institutions in the Asia-Pacific region. This project is a good teacher-training program, but unfortunately it focuses only on pre-service teachers.

The second project was organized by the Office of the Basic Education Commission (OBEC) under the Ministry of Education (MOE). This project was funded by the World Bank. OBEC and MOE set up a conceptual framework called the Secondary Education Quality Improvement (SEQI) Project. The main objective of this project was to improve the quality of secondary education with an integration of Information and Communication Technology (ICT) into the educational process of selected schools, focusing on four fundamental subjects: namely, science, mathematics, English language, and computer science (The Office of Basic Education Commission and the World Bank, 2005). It is significant that the project focused on the integration of technology into specific subjects. However, the project was organized for the lower-secondary educational level only.

In conclusion, it is apparent that a gap between a course and practice in using the Internet for EFL exists even in countries where more advanced technology has been used. Thailand is no exception. An effective training model together with practical training courses are greatly required since it is currently an age of educational reform and technology plays an important role in this new age, not only

for pre-service teachers but also for in-service teachers who must seek continuous professional development.

1.3 Purposes of the Study

According to the statement of problem, there is still an unanswered question of how to integrate knowledge received from a course with experiential knowledge. This study, therefore, attempted to

1.3.1 Explore the context of EFL secondary school teachers' use of the Internet for their instruction and needs for training.

1.3.2 Design and develop a teacher-training model to enhance an instructor's use of the Internet in TEFL.

1.3.3 Implement the teacher-training model to enhance an instructor's use of the Internet in TEFL.

1.3.4 Evaluate the teacher-training model to enhance an instructor's use of the Internet in TEFL.

1.4 The Research Questions

To achieve the four purposes of the study, the following research questions were asked:

1.4.1 How do EFL secondary school teachers in Thailand use the Internet for their instruction currently and what are their needs for training?

1.4.2 What are the elements and process of designing a teacher-training model in using the Internet for TEFL?

1.4.3 After the implementation of the model, how does the teacher-training model affect the teachers' use of the Internet for TEFL?

1.4.4 Does the model work effectively?

1.5 Research Assumptions

In this study, there are two assumptions:

1.5.1 EFL teachers have underlying constructs (i.e. ideas, beliefs, opinions, etc.) towards using the Internet for TEFL.

1.5.2 The EFL teachers who attend the training course are willing to learn and adopt and/or adapt the received knowledge for their classroom instruction.

1.6 Limitations of the Study

Although this study was to design a teacher-training model to enhance EFL teachers in using the Internet for their instruction, there are three limitations:

1.6.1 This study was limited to only EFL teachers from large-scale high schools which were more likely to have the availability of computers and Internet access rather than medium-scale and small-scale schools.

1.6.2 This study selected 10 schools from the whole country as participants in the pre-design stage. All of them are in the provincial cities with at least one university.

1.6.3 This study was limited to high schools which had joined the SchoolNet Thailand project of the Ministry of Education.

1.7 Significance of the Study

Although there has been a discussion on the relationship of a technology course and teacher's experience, there is no research demonstrating whether coursework or a one-shot training course designed to integrate knowledge received from the course and experiential knowledge can enhance instructors' use of technology. Moreover, there has been no evidence that there is such a course created for EFL teacher training. This study, therefore, may be a new instructional design of technology training for EFL teachers. A model designed to eliminate a gap between a training course and a real practice is always the ultimate goal for a course designer. Finally, the results of the study can make two main contributions to the field as follows:

1.7.1 This study can be a linkage between coursework and practice. Many studies (see Chapter 2) show that there is a split between coursework or practice. That may be because most courses were designed basically on the review of the literature and theories of teacher education but not on trainees' needs. This study can fill in this gap because context analyses including need analysis, curriculum analysis, and review of the literature were conducted at the very beginning of the study.

1.7.2 Mentioned as a focal point, this study can be a proper model for training EFL teachers to use the Internet in their instruction. The EFL teachers attending this training will learn not only the basic skills of using the Internet but also how to integrate such a technology to improve their instruction.

1.8 The Operational Definitions of Terms

In this study, the following terms are used.

Development

In this study, development refers to the process of analysis, design, development, implementation, and evaluation. Such a process is a generic concept of instructional design.

Teacher(s)

Teachers mean teachers of Thai secondary schools who joined the SchoolNet project run by National Electronics and Computer Technology Center (NECTEC).

The Internet

The Internet refers to the Internet applications including World Wide Web, e-mails, web board, chat room, and newsgroups.

Teaching English as a Foreign Language

Teaching English as a Foreign Language or TEFL refers to teaching English to students for whom it is not their mother tongue for use in a non-English-speaking region.

To conclude, Chapter 1 provides background on the need for in-depth investigation of EFL teachers' use of the Internet, the statement of problem, the purposes of the study, the research questions, the research assumptions, the limitations of the study, the significance of the study, and the operational definitions of terms. The subsequence chapters describe the present study in more detail.

CHAPTER 2

THE REVIEW OF RELATED LITERATURE

In order to develop a teacher-training model to enhance the use of the Internet in teaching English as a foreign language, the following literature and research are investigated:

2.1 Roles of the Internet in English language teaching

2.2 Professional education model

2.3 Instructional design

2.4 Teacher education in technology use

2.5 Needs for teacher education in technology use

2.6 Technology selected for teacher training: Moodle

2.1 Roles and Advantages of the Internet in English Language Teaching

Currently, research in the area of using the Internet for language teaching is not precisely categorized into teaching English as a second language (ESL) or teaching English as a foreign language (EFL). This review, therefore, presents the role of the Internet in overall English language teaching (ELT) instead of a particular role in teaching ESL or EFL.

The Internet plays a role in ELT and provides benefits for teachers and learners. In the following section, roles and advantages of the Internet in both teaching and learning are described.

2.1.1 Roles of the Internet in ELT

Academics and researchers have described the Internet in a variety of ways. Lewis (1994) stated that the Internet is a network of thousands of computer networks whereas Singhal (1997) described that it is a worldwide network of computers that interact on a standardized set of protocols which act independently of particular computer operating systems. The systems allow a variety of access methods to the Internet. It can be compared as a telephone system for computers. It can be used to both exchange information through electronic mails, newsgroups, email-based discussion lists, professional online discussion groups as well as to retrieve information on a variety of topics through World Wide Web (Warchauer & Whittaker, 1997; Singhal, 1997; Herring & Smaldino, 1998; Graus, 1999).

Some researchers also analyze the ways a communication takes place on the Internet. Such a communication is called a computer-mediated communication. Herring and Smaldino (1998) identified types of computer-mediated communication (CMC) due to types of connections which demonstrate a clear picture and are easily understandable.

According to Herring and Smaldino (1998), there are five basic types of computer-mediated communication by which information exchange is made possible on the Internet.

1. Learner-to-learner connections: this CMC type allows personal communication on the Internet, such as electronic mail, software programs for chatting such as IRC, MIRC or ICQ.
2. Learner-to-group connections: e-mail and web-based discussion lists, computer conferencing with text, real-time audio, and face-to-face video.

3. Learner-to-computer connections: an example of this is a connection of the learner directly to the Internet via an Internet Service Provider (ISP) and a modem. Another is a high-speed dedicated connection from universities of education institutes where computers are permanently connected to the Internet 24 hours a day without a modem to dial.
4. Learner-to-information archive connections: there are varieties of websites on the Internet for learners to access as information resources to their needs. Search tools are connections to students' information requirements.
5. Learner-to-any of the above connections: learners may connect to websites and send mail or perform any connections as they wish to do or are assigned to do so.

In accordance with the various types of CMC, there are several connections to the Internet which English language teachers can employ for their teaching. They can employ their either synchronous (real time) or asynchronous (time delayed) communications or both of them. Examples of synchronous CMC tools include Internet Relay Chat (IRC) programs or other chat rooms and video conferencing via computers. With these CMC tools, the learners can make real-time or simultaneous communications between learner-to-learner or learner-to-group conversations. An advantage of this type of CMC is that the learners can learn from people with the target language used in the real world or authentic settings (Herring and Smaldino, 1998). On the other hand, the users of asynchronous CMC tools (i.e. electronic mails or e-mails, mailing list, and bulletin boards or web boards) can employ them at their own pace and time.

2.1.2 Advantages of using the Internet for ELT

Many researchers (Frizler, 1995; Graus, 1999; Kroonenberg, 1994/95; Nunan, 1998; Singhal, 1997; Wang, 1993; Warschauer, 1996) have addressed the benefits of using the Internet to enhance learning in traditional classrooms and non-traditional classrooms like distance education. The Internet can fit the new paradigm in ELT, especially the learner-centered approach. The Internet benefits ELT in the following three aspects: 1) providing an authentic language learning environment, 2) facilitating lifelong learning, and 3) allowing shifting roles of the teachers.

(1) Providing an authentic language learning environment

Warschauer (1997) explained that "…using the Internet can provide electronic discourses and linguistic nature and functions communication in language teaching" (p. 102). In other word, students who use the Internet for their learning are facilitated to communicate with others as well as to practice their linguistic skills in an electronic setting. This idea is supported by the findings of Kelm (1992) using e-mail discussion transcripts of topics students raised in class to help locate and deal with students' grammar error. Students can tell teachers what they want, ask when the students are not clear, and communicate with their peers with the Internet. Davis and Chang (1994) pointed out that "…as writers on both sides of the world shared questions and comments, the students' reading and writing began to change as well" (p. 4). This statement is supported by many researchers (Chun, 1994; Kern, 1995; Wang, 1993) stating that the functions of online communication on the Internet are desirable and beneficial for language learning as using the Internet can create optimal conditions for learning to write as it provides an authentic audience for written communication. It can increase students' motivation. For example, news, articles on magazines, lyrics of

songs and pen-pal addresses available on the Internet provide a learning environment for them to practice skills of language competence in a real situation (Frizler, 1995; Graus, 1999; Warschauer, 1996).

Warschauer (1996) also stated that using the Internet in language learning can help develop computer skills. The skill is claimed to be essential to a student's future success as it is not only a matter of using the Internet to learn English but also of learning English to be able to function well on the Internet (Warschauer, 1997).

(2) Facilitating lifelong learning

Frizler (1995) and Nunan (1998) similarly described that teaching students through the Internet is a shift from a teaching environment to a learning environment. They believe that teaching students with the Internet can prepare them for life outside the classroom. Students are coached and facilitated by teachers to use the Internet for language learning, from which they will be able to teach themselves to develop their language skills. In this way, they gradually become lifelong learners. Teachers design activities or assignments for them to continue learning outside the classroom as well as fostering them to gain autonomy, equality, learning and social skills. Moreover, tasks the teachers assign to learners enable their capacity of seeking required information from overwhelming sources (Carwford, 1995; Warschauer, Furbee and Robert, 1994). When teachers carefully provide activities to have students practice or encourage learners to do the activities for themselves, students will learn more (Berge & Collins, 1995). In fact, the more language ability in English they gain, the more knowledge they can obtain since the greatest resources of knowledge of this era is the Internet and it is mostly represented in English.

(3) Allowing communicative, collaborative, and cooperative learning

Anderson (1995) viewed that the use of the Internet is to communicate with people all over the world to share information, experiences, and opinions in wide areas including business and economics. Communication via the Internet has been labeled computer-mediated communication, so called 'CMC' (Herring and Smaldino, 1998). The Internet is the single computer application to date with the greatest impact on language teaching (Garrett, 1991; Jonasson et al, 1995; Warschauer, 1996). It also provides opportunities for cooperative and collaborative learning, which are the process of getting the two or more students to work together to learn (Brown, 1999; Nunan, 1998). Projects that need information from communications between students from different cultures are cooperative work by making use of the Internet. Collaborative learning can take place from peer to peer teaching how to find required sites or how to use the Internet programs. Students share their learning experience with each other using the Internet as a means to do so.

Presently, there is a variety of information on websites allowing teachers, learners, and other users to access and retrieve information in authentic ways. The users can find effective search engines with which they can find the information they need. For EFL teachers and learners, many web sites also provide interactive learning choices and resources such as lesson plans, activities, exercises, and so on.

In sum, the Internet provides opportunities for language learners to communicate in authentic settings, retrieve and access information, continue lifelong learning, and work collaboratively with people in other parts of the world. There are, thus, no reasons why English language teachers should ignore the use of the Internet as a tool for their instruction.

Though the advantages of the use of the Internet have been presented in

research and articles, some problems and cautions in using the powerful technology must be noted. For teachers, there are a lot of concerns such as time-consuming, overwhelming amount of information, lack of training, unfamiliarity on software using skills, and even of specious information. For learners, researchers report the learners' limitations to access the Internet and lack of participation in activities (Frizzier, 1995; Mike, 1996; Nagel, 1996; Singhal, 1997).

In the light of roles and advantages of the Internet in ELT, this study encourages EFL teachers in Thailand to apply this technology to enhance Thai students' language learning. When using e-mails or chat rooms to communicate with native speakers, students are involved in an authentic setting. Reading news from newspaper online allows Thai students to obtain information as well as learning English. Moreover, training them to access information from the Internet leads them to consider the Internet a source for their life-long learning.

2.2 Professional Educational Models

In order to design a teacher-training model in using the Internet in teaching EFL, it is important to consider existing professional educational models. This part, therefore, aims to discuss the three existing models to see which is the most feasible for teacher training in Thailand.

To date, there are currently three major models which have historically appeared on the scene of professional education (Wallace, 1991). They are (1) the craft model, (2) the applied science model, and (3) the reflective teaching model. Each model has a different paradigm and is discussed in terms of suitability for the present study.

2.2.1 The craft model

The craft model is the model whereby the trainee learns by imitating expert techniques and by following the expert's instructions and advice. Wallace (1991) described that "in this model, the wisdom of the profession resides in an experienced professional practitioner: someone who is expert in the practice of the craft" (p. 6). With this model, a master teacher tells students what to do and shows them how to do it, and the students duplicate the master. However, the model is not applicable for contemporary society because "the concept of the venerable old master teacher is difficult to sustain in an educational context of new methodologies and new syllabuses" (Wallace, 1991, p. 6). In sum, the craft model gives due value to the experiential aspect of professional development, "but is essentially static and imitative" (Wallace, 1991, p.16). It does not handle satisfactorily the crucial element of the explosive growth of relevant scientific knowledge in recent times.

2.2.2 The applied science model

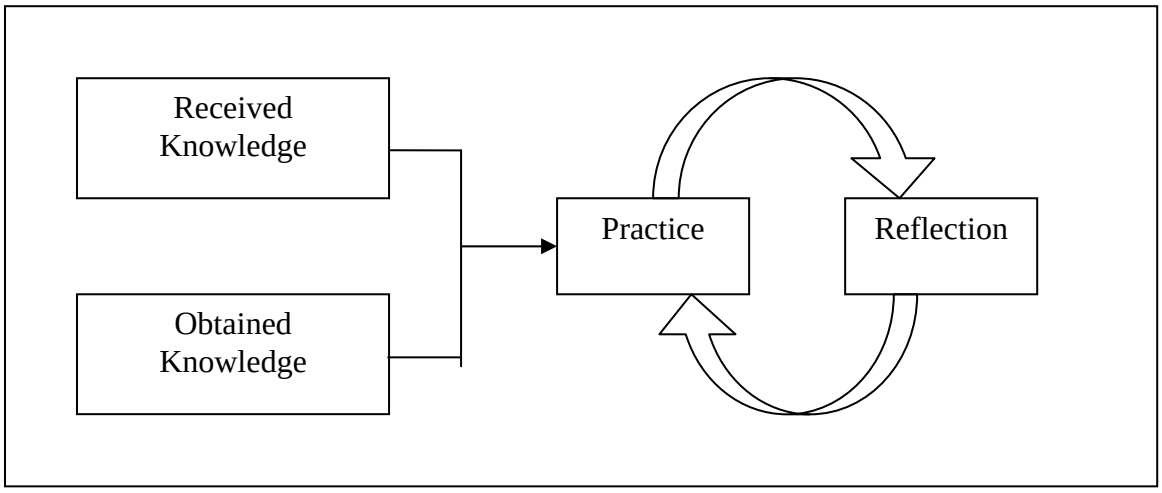
The applied science model is the traditional and "…probably still the most prevalent model underlying most training or education programmes for the professions" (Wallace, 1991, p. 8). In the model, the trainees learn by putting into practice the findings of scientific knowledge and experimentation conveyed to them by experts in the field. Many writers on education may analyze teaching problems in the similar way, that is, using scientific knowledge to achieve a certain clearly defined objective. However, this model has a disadvantage, that is, with the idea of this model, a solution of any teaching problems "…can be established only by those experts in the knowledge or experimental base, and not by the 'practitioners' themselves" (Wallace, 1991, p. 9). The applied science model has taken into account

but has led to a split between research and professional practice. This model tends to downgrade the value if the classroom teacher's expertise derived from experience and has not so far been able to deliver a scientific solution to very complex professional dilemmas (Wallace, 1991). Therefore, the latest model of professional development emerged.

2.2.3 The reflective teaching model

In the reflective model, the received knowledge derived from research findings is combined with experiential knowledge (which relates to trainees' practical on-going experience) to form so-called 'knowledge-in-action' (Komorowska, 1994; Wallace, 1991). The concept of reflective teaching model is presented in Figure 2.1.

Figure 2.1 The concept of reflective teaching model (Wallace, 1991, p. 18)



The reflective teaching model has been described by many authorities. Richards and Lockhart (1995) mentioned that the reflective teaching approach is the model in which teachers and student teachers collect data about teaching, examine their opinions, beliefs, assumptions, and teaching practices, and use the information obtained as a basis for critical reflection about teaching. In other words, the reflective teaching model is the term signifying "… a movement in teacher education in which

student teachers or working teachers analyze their own practice and its underlying basis and then consider alternative means for achieving their ends…" (Pennington, 1992, p. 48). In details, the term reflection in the context of instruction "…can be interpreted in the sense of (1) thoughtful consideration, as well as in the sense of (2) mirroring, symbolizing or representing" (p. 49). Florez (2001) stated that "reflective practice is an evolving concept" (p. 38). In 1930, the word reflection was defined by John Dewey as a proactive, ongoing examination of beliefs and practices, their origins, and their impacts (Stanley, 1998) and then reflective practice has been influenced by various philosophical and pedagogical theories such as constructivism (Florez, 2001).

In terms of teacher training, Wallace (1991) described that in the reflective teaching model, the received knowledge derived from research findings is combined with experiential knowledge relating to trainees' ongoing experience to form so-called 'knowledge-in-action.' It is designed for use in pre-service and in-service teacher education programs offering a teaching practicum or courses on classroom observation, theories of teaching, or language teaching methods and approaches (Richards & Lockhart, 1995). In order to select an appropriate teaching training model, it is essential to understand the basic assumptions of teacher education or teacher development.

Richards and Lockhart (1995) conveyed five assumptions about teacher development as follows:

(1) An informed teacher has an extensive knowledge base about teaching.

Since teaching is complex and multidimensional, Richards and Lockhart (1995) believed that "the teacher who has a more extensive knowledge and deep awareness

about the different components and dimensions of teaching is better prepared to make appropriate judgments and decisions in teaching" (p. 23).

(2) Much can be learned about teaching through self-inquiry.

It is believed that teachers are able to collect information about their teaching either by themselves or by collaboration among colleagues. According to their gained information, they can also decide about their teaching, initiate something if required, and select strategies to carry them out.

(3) Much of what happens in teaching is unknown to teachers.

Many times it is difficult to be aware of what happens in class. Teachers may not recognize what they do and how they handle many of the moment-to-moment decisions that arise.

(4) Experience is insufficient as a basis for development.

Although experience is a key component of teacher development, many experienced teachers apply many classroom routines and strategies almost automatically and do not involve a great deal of conscious thought or reflection. Such an experience can play a productive role when it is examined systematically.

(5) Critical reflection can elicit a deeper understanding.

Critical reflection involves examining teaching experiences as a basis for evaluation and decision making and a source for change.

There are benefits to implementing the reflective teaching model into ESL/EFL classrooms as follows (Bailey, 1998; Bailey, Curtis & Nunan, 1998; Crandall, 2000; Farrell, 1998; Florez, 2001; and Stanley, 1998).

(1) Reflective teaching model provides flexibility.

The field of adult ESL varies in instructional contexts, learner groups, curricula, available resources, and amount and type of teacher preparation. Since reflective practice springs from the needs and interests of the practitioners, it can address this variety. It can be constructed as an individual or group process, although, because good reflective practice draws upon the input of learners, colleagues, and others, it is by nature collective (Florez, 2001). New teachers examine successes and failures in a constructive environment; seasoned teachers further self-awareness and knowledge through personal experience.

(2) Reflective teaching model is practical.

Bailey (1998) stated that one of the potentials of reflective teaching model is to clarify the teachers' thinking. From the teachers' information, the reflective teaching model requires the teachers to make connections between what is happening in a specific context and their broader beliefs (Florez, 2001). Therefore, it can be very useful for ESL/EFL teachers who have limited time to be divided between teaching and professional development. In the process of reflective teaching, the teachers can explore and reflect on new techniques, ideas, and approaches whereas it centers on links between theory and practice.

(3) Reflective teaching model promotes professionalism.

According to the requirement for ongoing exercise of intellect, responsibility, and professionalism, the reflective teaching model promotes deliberate actions in planning and implementing instruction and ongoing engagement with theory. Therefore, reflective teaching can be an intensely private means of conducting one's ongoing professional life (Bailey, 1998).

(4) Reflective teaching model remains sustainable

The reflective teaching model creates a cyclical process allowing time for reflection, implementation, and follow-up. Development and exercise of skills and opinions are central. Consequently, the teachers and teacher students can continue their sustainable development. In the level of curriculum design, reflective teaching can also be applied. For instance, Posteguillo and Palmer (2000) attempted to overcome the problems based on the existing gap between theoretical input and pedagogical teacher training through a reflection process on language teaching. They believed that linguistic input should not be taught independently of pedagogical considerations, whereas there was a tendency that a linguistic theory is separated from methodology in language teaching. In their study, they employed Barlette's reflective model. Barlett viewed that the process of reflection should be aimed at becomeing critically reflective teachers by transcending the methodological state and becoming immerse in the wider context of actual teaching. In this project, the researchers tried to overcome a gap between linguistic theoretical input and methodological language teacher education in English philosophy degree in Spain. The researchers mentioned that it was too early to assess results, but initial indicators including attendance, students' opinion and interest, and material being designed suggested that this attempt of reflective integration of theory and practice in language teaching might not be useless.

From the review, the reflective teaching model is the model in which the received knowledge derived from research findings is combined with experienced knowledge. It is flexible and practical for teachers. Moreover, it promotes professionalism and remains sustainable for life-long professional development.

In sum, it seems that among the three aforementioned models, the reflective

teaching model is the most effective model which can be used for teacher development. This model is likely to be a compromise solution which “gives due weight both to experience and to scientific basis of the profession” (Wallace, 1991, p. 17). However, there is no obvious description about how to use the reflective teaching model to design the teacher training step by step. The present study, therefore, aims to develop a teacher-training model with the framework of the reflective teaching model.

2.3 Instructional Design

Instructional Design (ID) is a systematic analysis of learning needs and systematic development of instruction. It is also known as Instructional Systems Design (ISD). Instructional designers often use instructional technology as a method for developing instruction. Instructional design models typically specify a method that, if followed, will facilitate the transfer of knowledge, skills and attitude to the recipient or acquirer of the instruction.

To quote McGriff (2000), there are more than 100 different ID or ISD models, but almost all are based on the generic "ADDIE" model. Most of the current instructional design models are spin-offs or variations of the ADDIE model. The acronym ADDIE stands for Analysis, Design, Development, Implementation, and Evaluation. Each step has an outcome that feeds the subsequent step.

Step 1: Analysis

The Analysis phase is the foundation for all other phases of instructional design. During this phase, a designer must define the problem, identify the source of the problem and determine possible solutions. The phase may include specific

research techniques such as needs analysis, job analysis and task analysis. The outputs of this phase often include the instructional goals, and a list of tasks to be instructed. These outputs will be the inputs for the Design phase.

Step 2: Design

The Design phase involves using the outputs from the Analysis phase to plan a strategy for developing the instruction. During this phase, the designer must outline how to reach the instructional goals determined during the Analysis phase and expand the instructional foundation. Some of the elements of the Design phase may include writing a target population description, conducting a learning analysis, writing objectives and test items, selecting a delivery system, and sequencing the instruction. The outputs of the Design phase will be the inputs for the Development phase.

Step 3: Development

The Development phase builds on both the Analysis and Design phases. The purpose of this phase is to generate the lesson plans and lesson materials. During this phase, the designer develops the instruction, all media that will be used in the instruction, and any supporting documentation. This may include hardware (e.g., simulation equipment) and software (e.g., computer-based instruction).

Step 4: Implementation

The Implementation phase refers to the actual delivery of the instruction, whether it is classroom-based, lab-based, or computer-based. The purpose of this phase is the effective and efficient delivery of instruction. This phase must promote the students' understanding of material, support the students' mastery of objectives, and ensure the students' transfer of knowledge from the instructional setting to the job.

Step 5: Evaluation

This phase measures the effectiveness and efficiency of the instruction. Evaluation should actually occur throughout the entire instructional design process - within phases, between phases, and after implementation. Evaluation may be formative or summative. Formative Evaluation is ongoing during and between phases. The purpose of this type of evaluation is to improve the instruction before the final version is implemented. Summative Evaluation usually occurs after the final version of instruction is implemented. This type of evaluation assesses the overall effectiveness of the instruction. Data from the Summative Evaluation is often used to make a decision about the instruction (such as whether to purchase an instructional package or continue/discontinue instruction).

In sum, the instructional design is based on five fundamental steps including analysis, design, development, implementation, and evaluation. These five steps are known as the ADDIE model. The present study attempted to modify the Reflective Teaching Model as mentioned in 2.2.3 and the ADDIE model because the ADDIE is a generic, systematic approach to the instructional design process, which provides the instructional designer with a framework in order to make sure that the instructional products are effective and that the creative processes are as efficient as they can possibly be.

2.4 Teacher Education in Technology Use

In order to design the teacher-training model of using the Internet for TEFL, it is essential to realize the current situation of teacher education in technology use. Egbert, Paulus, and Nakamichi (2002) made a very comprehensive review of the

literature in the field which, to them, is rather fragmental and unlinked. Their review precisely reveals what has been done in teacher education in technology use. To the researchers, research in the field of teacher education in technology use is divided into four separate but mutually exclusive foci: how teachers learn technology, the interaction between coursework and the classroom, factors affecting technology use, and professional development in technology use.

2.4.1 How teachers learn technology

Research in how teachers learn technology is still questioned. Some research shows that teachers will be confident in using technology for their teaching situation when they learn how to use it in the pre-service coursework (Knezek, Christensen, and Rice, 1996). In addition, Lam (2000) mentioned that teachers' opinions towards computers improve through such coursework. However, those studies do not show what pre-service teachers take away from the courses and use in their teaching (Egbert, Paulus, and Nakamichi, 2002).

The literature to date attempts to answer three questions stressed by Galloway (1996); that is, what computer experienced teachers need to gain, how they actually use computers, and how they learn to use and adopt computers. The answers to such questions were divided into two "overarching themes" (Egbert, Paulus, and Nakamichi, 2002, p. 110). The first theme is that teachers learn what they actually need to use. There are studies noting that pre-service teachers use technology when they find enough evidence of the effective new teaching methods on quality of learning outcomes and professional development (Mcmeniman& Evans, 1998) and that pre-service teachers learn to use technology applications when they need to use in their lives outsides of school (Galloway, 1996; Smerdon et al., 2000). The second

theme is that coursework does not always address teachers' or students' need. The knowledge and technology skills which pre-service teachers learn through coursework may not be what they need or perceive they need to know (Egbert et al., 2002). It is always found that technology applications taught in teacher- education coursework are not up-to-date and practical for teachers to implement them in their teaching, but more likely to use them as a supplementary. The two aforementioned themes show that coursework alone, devoid of the opportunities to practice, apply, and see evidence of student improvement, may lead to technology learning but not necessarily to its use. What seems to have more impact on teacher learning is peer collaboration in situated learning contexts (Fisher, 1999; Marsh, 1996; Smerdon et al., 2000).

From this review, it is significant that a new paradigm of teacher education in technology use is needed. There is still a gap between teachers' experience and real use of technology. The structure of CALL coursework and professional development experiences are rarely built on a model of teacher inquiry. This is a challenge for a course designer to find a solution. The present study, as a result, attempts to use a modified reflective teaching model as the foundation of model design in order to overcome the existing problem.

2.4.2 Interactions between coursework and classroom

It is difficult to find research reviewing the interaction between coursework and classroom. What is mainly noted by the existing research is that the coursework might not facilitate teachers integrating technology into their teaching (Egbert, Paulus, and Nakamichi, 2002). The lack of facilities provided by schools is one barrier in doing so (Wentworth, 1996). Grau (1996) compared the transfer between traditional one-course computer training for teachers and a year long on-site implementation

program, and found that mentoring and site-based application led to transfer. He also concluded that it takes a minimum of 3 years to cause considerable change in teacher practice and that a one-shot course is not effective in doing this.

Although the coursework may not change teachers' practice, Kerins (1992) found that teachers' opinions towards technology can improve and initiate their thoughts of the integration of computer into their classrooms. This idea was supported by Parr's (1999) notion that slow integration might also be due to the lack of collaborative culture supporting computer use in the schools. Hargrave and Hsu (2000) found that a single, non-site-based technology course is not likely to have much direct immediate impact on teachers' classroom uses of computers.

In sum, it is clear that teachers still have a problem of transferring knowledge from coursework to real practice. This is because there are many factors influencing their technology use which is discussed in the next section.

2.4.3 Factors influencing technology use

The third focus is the influence on teachers' use of technology. Factors which may influence teachers' use of technology are in a wide range. These include pressure to use it to opportunity to learn new skills (Debski, 2000), pre-service use, perception of the usefulness of technology for teaching, and overcoming technology-related anxiety (Knezek, Christensen, and Rise, 1996), teachers' confidence and positive opinions towards technology (Fisher, 1999; and Lam, 2000), and the hospitality of computers at home (Yildirim, 2000).

Egbert, Paulus, and Nakamichi (2002) found many barriers preventing technology use including time limitations both outside and during class (Lam, 2000; Levy, 1997a; Reed et al, 1995; Smerdon et al, 2000, Strudker, Quinn, McKinney, and

Jones, 1995), lack of resources and materials (Loehr, 1996; Smerdon et al., 1998); insufficient or inflexible guidelines, standards, and curricula (Langone et al., 1998), lack of support or recognition for integrating computers (Grau, 1996; Strudler, Mckinney, and Jones, 1999), a clash between new technologies at universities and older ones in schools; lack of leadership (Smerdon et al., 2000), and inadequate training and technical support (Abdal-Haqq, 1995; Lam, 2000; Langone et al., 1998; Levy, 1997a; Smerdal et al., 2000), age, gender, opinions toward technology, and teaching experience (Lam, 2000), and the rate of technological change (Levy, 1997a).

It is clear that a course designer has to consider many factors that can influence the effectiveness of the course. He/she can increase the course effectiveness by attempting to eliminate or at least reduce barriers noted in the cited research. It is, therefore, essential that a pre-design survey should be conducted to explore what could be barriers for a training course in order to make a good design for teacher-training in using the Internet for TEFL.

2.4.4 Professional development in technology use

Even though professional development in technology use seems to be one crucial aspect of language teacher education, little empirical research on computer-using language teachers' professional development has been found (Egbert, Paulus, and Nakamichi, 2002). From a small number of research studies, it is found that a lack of resources is one barrier of professional development in technology use (Grau, 1996). However, teachers may develop themselves professionally when they receive "a firm grounding in CALL theory through their coursework" (Egbert, Paulus, and Nakamichi, 2002, p. 113). That is, teachers can learn additional skills on their own after their coursework. Levy (1997b) argues that it is nearly impossible to cover

every piece of technology in the course. However, if teachers understand the underlying theories and perspectives of technology integration, they can continue to learn and develop their materials according to their future needs.

In conclusion, the review of the four aforementioned foci of teacher education in technology use indicates that technology coursework can change teachers' opinions toward and confidence with technology and can also provide them with skills that they did not previously have. It also suggests that one course alone is possibly insufficient to change teachers' practice either immediately or over time. Moreover, it shows that teachers learn many of their technology skills on their own and use technology specifically to support their current teaching practices. In addition, teachers have different reasons for using and avoiding technology, but those who have more experience in teaching and in technology use, especially in practice, are more likely to integrate technology in their classrooms. More important, teachers need to have specific needs met during their technology learning. Finally, barriers to classroom use may also hinder the professional development of technology-using teachers. This review holds important implications for the design of CALL coursework and teacher training. The present study, therefore, attempts to design a teacher-training model in order to complete the gaps as much as possible.

2.5 Needs of Teacher Education in Technology Use

To quote Arnold and Ducate (2005), technology has become an integral part of learning and teaching. The influence of technology has pervaded all aspects of the educational, business and economic sectors of our world. Because the use of the Internet is widespread in numerous fields and domains, without a doubt, it also

carries great potential for educational use.

Countries all over the world are eager in developing technological infrastructure such as the availability of computers and the Internet access. Thailand is no exception. The National Information Technology Committee Secretariat (NITCS) has set up Thailand IT policy (NITCS, 2000) into the 21st century with three major agendas:

Agenda 1: Invest in an equitable information infrastructure

This agenda is the policy to empower human ability and enhance people's life quality. The phrase information infrastructure includes "…telephones, pages, fax machines, switches, copper & coaxial cable, satellites, fiber optic cable…, computers, printers, …, new equipment and technologies, notably in applications and systems software" (p.4).

Agenda 2: Invest in people

This agenda aims to build "a literature populace and an adequate information technology manpower base" (p. 7). It is essential to prepare people for the information age as "…teachers and university lecturers must provide a role model in the use of IT. The training of teachers and lecturers in acquiring at least adequate basic IT skills is therefore very important…" (p. 8).

Agenda 3: Invest for good governance

Information technology holds promises in profoundly change the way we live, work, learn, and play. The changes that may well follow from such a pervasive and enabling technology can only be described as revolutionary. It is, therefore, important for the state to "…encourage, promote, support, and coordinate the development, institutional, infrastructure, industry, or human resources" (p. 9).

From the three prominent agendas, Thailand has involved the process of technology development in many aspects: industry, society, and education. In terms of education, the country has been working cooperatively with UNESCO Asia and Pacific Regional Bureau for Education since 1949 (Ministry of Education, 2003). For this purposes, a department called Information and Communication Technologies (ICT) for Education in Asia-Pacific has been set up. The department reports the current trends in using technology in this region (UNESCO, 2003), one of which is "an irreversible trend" (p. 1) to transform their force and educational staff into technology literate and skilled workers. The teacher training programs on technology use for education are being initiated in varying degrees and scope. It also reported that many developing countries have provided training programs on computer literacy. However, there is "…an apparent tendency for curriculum contents to be more oriented towards basic computer literacy for the emerging/developing countries" (p. 3).

This irreversible trend is also precisely mentioned in Thailand IT policy presented by NITCS (2000) mentioned above. One of the initiatives for Agenda 2 states that

> *"Make IT an integral tool in education and training at all levels. The use of IT in education must not be restricted to science and technology, but to include the humanities and the arts as well"* (p. 14).

Apart from the report of UNESCO and the policy of NITCS, Section 65 in Chapter 9 of the 1999 National Educational Act clearly states that "Steps shall be taken for personnel development for both producers and users of technologies for education so that they shall have the knowledge, capabilities, and skills

required for the production and utilization of appropriate, high-quality, and efficient technologies".

In conclusion, since Thailand has committed to the development of technology use in all of the aspects: infrastructure, people, and governance, there is no doubt why personnel in education must involve in the process of professional development.

2.6 Technology Selected for Teacher Training: Moodle

In the light of needs of teacher education in technology use especially in Thailand (as mentioned in 2.5), there have been development in educational technology with which teachers can improve their instruction. One important development is Electronic Learning (E-learning). In order to manage an e-learning, Course Management Systems are required. In this part, general information about CMS and one kind of CMS (Moodle) are presented.

2.6.1 Course Management Systems

One popular technology is called Course Management System (CMS). CMS is a software system designed to assist teachers in the management of educational courses for their students, especially by helping teachers and learners with course administration. The system can often track the learners' progress, which can be monitored by both teachers and learners. While often thought of as primarily tools for distance education, CMS is most often used to supplement the face-to-face classroom. The system usually runs on a server, using one or more databases and a programming or scripting language such as PHP to serve the course to students as internet pages. Components of these systems usually include templates for content pages, discussion forums, chat, quizzes and exercises such as multiple-choice, true/false, and one-word-

answer. Teachers fill in these templates and then release them for learners to use. New features in these systems include blogs and RSS. Services generally provided include access control, provision of e-learning content, communication tools, and administration of the user groups. There are many software packages of CMS such as ATutor, ILIAS, and Moodle. One of the most frequently employed CMS is Moodle.

2.6.2 Modular Object-Oriented Dynamic Learning Environment (Moodle)

Currently, many educational institutes have developed a free open source software package for online learning. Moodle is one of the most popular CMS designed to help educators easily create quality online courses (Dougiamas, 2002). Such e-learning systems are sometimes also called Learning Management Systems (LMS) or Virtual Learning Environments (VLE). The distinctive features and the modules in Moodle are presented below

2.6.2.1 The Features of Moodle

To quote Dougiamas (2002), several distinctive features of Moodle include the following:

1. Moodle runs without modification on Unix, Linux, Windows, Mac OS X, Netware and any other system that supports PHP (which includes almost every web hosting provider).
2. Moodle is designed in a modular way and allows a great deal of flexibility to add (and remove) functionality at many levels.
3. Moodle can be upgraded very easily from one version to the next - it has an internal system to upgrade it's own databases and repair itself over time.
4. Moodle requires only one database (and can share it with other

applications if necessary).

5. Moodle includes comprehensive database abstraction that supports many major brands of database.
6. Moodle emphasizes on strong security throughout. Forms are all checked, data validated, cookies encrypted, etc.
7. Moodle promotes a social constructionist pedagogy (which includes collaboration, activity-based learning, critical reflection, etc).
8. Moodle is suitable for 100% online classes as well as supplementing face-to-face learning.
9. Moodle has a simple, lightweight, efficient, compatible, low-tech browser interface.
10. Course listings show descriptions for every course on the server, including accessibility to guests.
11. Courses can be categorized and searched - one Moodle site can support thousands of courses.
12. Most text entry areas (resources, forum postings, journal entries etc) can be edited using a capable, embedded WYSIWYG HTML editor.

2.6.2.2 The Modules in Moodle

In Moodle, there are various modules (also referred to as ‘tools’) which can be used to serve course’s objectives or designed learning activities. Teachers can decide which module is appropriate for their course. Each module is described below.

- Assignments

Assignments allow teachers to grade electronically submitted material or 'offline' submissions such as paper-based assignments or class presentations.

- Chats

The Chat module allows participants to have a real-time synchronous discussion via the web. This is a useful way to get a different understanding of each other and the topic being discussed.

- Choices

Here the teacher asks a question and specifies a choice of multiple responses. This can be useful as a quick poll to stimulate thinking about a topic; to allow the class to vote on a direction for the course; or to gather research consent.

- Forums

It is in forums that most discussion takes place. Forums can be structured in different ways and can include peer rating of each posting. The postings can be viewed in a variety of formats and can include attachments.

- Glossaries

This activity allows participants to create and maintain a list of definitions, like a dictionary. The entries can be searched or browsed in many different formats.

- **HotPot**

This module allows teachers to create multiple-choice, short-

answer, jumbled-sentence, crossword, matching/ordering and gap-fill quizzes using Hot Potatoes software.

- Lessons

A lesson delivers content in an interesting and flexible way. It consists of a number of pages. Each page normally ends with a multiple choice question. Navigation through the lesson can be straight forward or complex.

- Quizzes

This module allows the teacher to design and set quiz tests, consisting of multiple choice, true-false, and short answer questions and more. Each attempt is automatically marked, and the teacher can choose whether to give feedback or to show correct answers.

- Resources

Resources can be prepared as a file to be uploaded to the course server. Pages can be edited directly in Moodle or external web pages can be made to appear part of the course.

- Surveys

The Survey module provides a number of verified survey instruments that have been found useful in assessing and stimulating learning in online environments.

- Workshops

A Workshop is a peer assessment activity with a huge array of options. It allows participants to assess each other's projects, as well as exemplar projects, in a number of ways.

- Wiki

A wiki is a web page that anyone can add to or edit. It enables documents to be authored collectively and supports collaborative learning. Old versions are not deleted and may be restored if required.

Since Moodle provides features and modules beneficial for teaching and learning environments, this open source has been selected for the present-study. The courses created in the training can also be shared with other schools easily because the Ministry of Education also uses Moodle for the Labschool project which includes public schools all over the country.

From the review of the literature, the Internet should be an integral part of the teacher training. They take an important role and provide many advantages in ELT. Moreover, there are many free software packages developed for teaching and learning online such as Moodle. Educational institutes and authorities, therefore, have been attempting to encourage their teachers to integrate some kinds of the Internet use into the real teaching situation. However, training teachers to use technology is not simple. Teachers use technology when they perceive they really need it. Even though they need to learn it, there are many barriers which obstruct technology use. It is important, therefore, for a training course designer to develop a practical teacher-training model or course which encourages teachers to adopt and/or adapt the trained knowledge into their teaching situation. The present, therefore, aimed to do just that.

In conclusion, this chapter presented the review of the related literature including roles of the Internet in English language teaching, professional education and reflective teaching, instructional design, teacher education in technology use, needs for teacher education in technology use, and technology selected for teacher training accordingly.

CHAPTER 3

RESEARCH METHODOLOGY

This study aimed to develop a teacher-training model in using the Internet for teaching English as a foreign language (TEFL). Since the present study was research and development, the research methodology is presented as follows:

3.1 Phase 1: Context analyses

3.2 Phase 2: Model development

3.3 Phase 3: Model implementation

3.4 Phase 4: Model evaluation

Population, sample, research instrumentation, research procedures, and data analyses are presented in each phase

3.1 Phase 1: Context Analyses

This phase was to explore information about of EFL teacher use of the Internet for their instruction. This includes current use, opinions, feelings, perceptions on how the Internet could be used effectively, reservations, and needs for training. Moreover, problem analysis, learning standard analysis, and infrastructure analysis were also conducted in order to obtain crucial information for development of a model design.

3.1.1 Population and sample

3.1.1.1 Population

The population of the study was EFL secondary school teachers from 1,741 schools in Thailand. All of these schools have joined the SchoolNet Thailand Project organized by National Electronics and Computer Technology Center (NECTEC).

3.1.1.2 Samples

The sample for this phase was EFL secondary school teachers from large-size schools which were randomly selected according to the following criteria:

1. The sample was high school EFL teachers from large-size public schools because the schools tended to have a higher availability of computers and Internet access for students than medium-and small-size schools.
2. The sample was from secondary schools in the provincial cities with at least one university. This is because such a school is located near a university that provides teacher education courses. And it is convenient for teachers from such a school to work cooperatively with researchers from a university in the area.

Based on the criteria above, the following steps were taken for sample selection:

1. There are 24 public and semi-autonomous universities in 11 provinces all over Thailand as listed below:

Table 3.1 The number of universities in Thailand

Region	Province	Number of Universities
North	Chiang Mai	2
	Chiang Rai	1
	Phitsanulok	1
Central	Bangkok	12
Northeast	Khon Kaen	1
	Nakorn Ratchasima	1
	Ubonratchathani	1
	Mahasarakram	1
South	Songkhla	2
	Nakorn Sri Thammarat	1
East	Chonburi	1
	Total	**24**

2. Based on the number of universities in each province, the schools which are the representatives of the regions are

North	1. Wattanothai Payap School	Chiang Mai
	2. Chalermkwanstree School	Phitsanulok
Central	1. Triumudomsuksa School	Bangkok
	2. Hor Wang High School	Bangkok
	3. Satreewittaya II School	Bangkok
Northeast	1. Khonkaen Wittayayon School	Khon Kaen
	2. Ratchasima Wittayalai School	Nakorn Ratchasima
South	1. Hatyai Wittayalai School	Songkhla
	2. Muang Nokorn High School	Nakorn Si Thammarat
East	1. Chonkanyanukul School	Chonburi

3. Ten EFL teachers from each school were selected by simple random sampling. Therefore, the sample of the study was 100 EFL

teachers from 10 schools systematically distributed all over Thailand.

3.1.2 Research instrument and instrumentation

In this phase, a pre-design questionnaire was used to survey the Internet use of secondary school EFL teachers from 10 schools all over Thailand. It also investigated their needs, opinions, problems, and concerns regarding the use of the Internet for TEFL. The data gathered were crucial for designing the teacher-training model in using the Internet for TEFL.

The questionnaire was modified from Smerdon et al. (2000) and Berkeley Planning Associates (1997). The questionnaire created by Smerdon et al. (2000) was to investigate public school teachers' use of technology. Some items asking about teachers' use of technology were selected and adapted into this study's questionnaire to ask how secondary school EFL teachers use the Internet for their instruction. Apart from that, some items in the questionnaire created by Berkeley Planning Associates (1997) were also adapted in order to evaluate secondary school EFL teachers' opinions toward using the Internet for TEFL. Moreover, open-ended questions were added to reveal the EFL teachers' opinions and perceptions in using the Internet in their instruction.

The pre-design questionnaire consisted of five parts asking (1) general use, (2) opinions in using the Internet in TEFL, (3) feelings when using it, (4) perceptions on the most effective ways of Internet use, and (5) needs for training. In the part regarding general use, there were checklists for places and times for computer and Internet use, and there were eight items with a three-point rating scale to answer how often the teachers use the Internet for each purpose. In the part regarding opinions in

using the Internet in TEFL, nine items with a four-point rating scale were provided to answer about their opinions in using the Internet for their instruction. In a part regarding feelings one yes/no question and one open-ended were used. In the part regarding perceptions about the most effective ways of Internet use, one open-ended was provided. Finally, in the part regarding needs for training, there were two kinds of items: one item with multiple choices to ask about the suitable time for training and eleven items with a three-point rating scale to rate the necessities of training content.

The questionnaire was piloted to check its reliability at Northern Triumudomsuksa School in Phitsanulok. The teachers who were in the pilot study were asked to complete the questionnaire and give comments on the questionnaire items. The SPSS software was used to analyze the data from the pilot study. In order to check the reliability of the questionnaire, a statistical test was used. The items which were tested were the items asking about respondents' opinions. These included Question 5 and Question 12. The reliability of the questionnaire was 0.92. The rest of the questionnaire was checked for content validity by the authorities. Some comments on the Thai language use were obtained and used to revise the questionnaire to avoid ambiguity. The pre-design questionnaire for the study is in Appendix A.

3.1.3 Research procedures

3.1.3.1 The literature about teacher-training in technology use was reviewed to obtain the basic concepts for the present study.

3.1.3.2 The current teachers' use of the Internet, their opinions in using the Internet in TEFL, their feelings when using it, their perceptions on the most effective ways to use the Internet, and their needs for training were investigated by

conducting a pre-design survey. A pre-design questionnaire was used for which eighty of a hundred questionnaires were returned.

3.1.3.3 The English learning standards set up by the Ministry of Education were studied. A summary of the learning standards were presented in writing.

3.1.3.4 The literature of teacher-training in technology use in Thailand was studied and analyzed.

3.1.3.5 The infrastructure analysis was conducted.

3.1.4 Data analysis

Data from the pre-design questionnaire were analyzed using descriptive statistics including mean, standard deviation, frequency and percentage. The data, including data from multiple choice items, rating scale items, and yes/no items, were coded and analyzed using the SPSS software. The answers obtained from the open-ended questions were read, the keywords coded, and finally the frequencies of each category counted.

3.2 Phase 2: Model development

This phase was to develop the teacher-training model in using the Internet for TEFL. The information obtained from Phase 1 was used for the initial design of the teacher-training model in using the Internet for TEFL.

3.2.1 Population and samples

3.2.1.1 Population

The population of Phase 2 were experts in teacher-training in technology use who had at least 3-years experience in the field, experts in

instructional design who had degrees in the field and at least 3-years experience, and experts in TEFL who had at least 3-years experience in the field.

3.2.1.2 Samples

The sample of Phase 2 were three experts in teacher-training in technology use, three experts in instructional design, and three experts in TEFL.

3.2.2 Research instruments and instrumentation

In this phase, there were three instruments used for three groups of experts as follows:

3.2.2.1 The unstructured interview in teacher-training in technology use

The interview was to ask the experts about the factors in teacher-training in technology use which would be considered in order to develop the teacher-training model in using the Internet for TEFL.

3.2.2.2 The unstructured interview in TEFL

The interview was to ask the experts about the factors in TEFL which would be considered in order to develop the teacher-training model in using the Internet for TEFL.

3.2.2.3 The model evaluation form

An evaluation form of the teacher-training model was adopted from Boonumpai (1997) in order to evaluate the steps and process of the model. There were ten items with a five point rating scale and one open-ended question in the evaluation form. Together with the prototype model, the evaluation form was sent to three experts in teacher-training and EFL to evaluate the appropriateness of the designed model. The evaluation results and suggestions obtained were used to

improve the training model. The evaluation form of the teacher-training model is in Appendix B.

3.2.3 Research Procedure

After obtaining the information about the current context of Internet use for TEFL, problem analysis, learning standard analysis, and infrastructure analysis, the basic factors of teacher-training in using the Internet for TEFL were synthesized as these following steps.

3.2.3.1 The factors of teacher-training in using the Internet for TEFL were initially analyzed and synthesized.

3.2.3.2 The conceptual framework of the study was set up. The factors and the process of the model were synthesized.

3.2.3.3 In order to ensure the appropriateness of the factors and the process of the designed model, the unstructured interview with experts in teacher-training in technology use, the unstructured interview with experts in TEFL, and the model evaluation by the experts in instructional design were conducted.

3.2.3.4 The data obtained from the interviews and the model evaluation were analyzed.

3.2.4 Data analyses

3.2.4.1 The qualitative data from the interviews were analyzed and presented in writing.

3.2.4.2 The quantitative data from the model evaluation were analyzed using descriptive statistics, including mean and standard deviation.

3.3 Phase 3: Model Implementation

This phase was to implement the designed model. The training course designed based on the model was created in order to study the effectiveness of the model and obtain information to revise the model.

3.3.1 Population and samples

3.3.1.1 Population

The population of this phase was EFL teachers at the secondary schools which joined the SchoolNet Project run by the Ministry of Education.

3.3.1.2 Samples

The sample was 16 EFL teachers from Chalermkwanstree School, Phitsanulok. The sample was chosen on a voluntary basis. They were a representative of secondary school teachers because it is a large-size school joining the SchoolNet Project. Hereafter, the EFL teachers who attended the training are called ‘the trainees’ and the researcher of the present study ‘the trainer’.

3.3.2 Research instruments and instrumentation

In this phase, there were three instruments used as follows:

3.3.2.1 A pre-implementation questionnaire

A pre-implementation questionnaire was developed from a pre-design questionnaire to investigate the sample’s use, opinions, and reservations about using the Internet for TEFL. This questionnaire also contains a self-evaluation on basic computer skills and the Internet.

The questionnaire was modified from the pre-design questionnaire consisting of three parts asking (1) general use, (2) opinions in using the Internet in TEFL, and (4) self-evaluation of basic computer skills and the Internet. In the part

regarding general use, there were checklists for places and times for computer and Internet use and eight items with a three-point rating scale to answer how often the teachers used the Internet for each purpose. In the part regarding opinions in using the Internet in TEFL, nine items with a four-point rating scale were provided to answer about their opinions in using the Internet for their instruction and an open-ended question to express their reservations about using the Internet for their instruction. In the part regarding self-evaluation on basic computer skills and the Internet, there were twelve items with a five-point rating scale.

The questionnaire was piloted to check its reliability with 35 summer M.A. in English students at Naresuan University. The M.A. students were chosen to be a pilot group because they would be trained using Moodle to create online activities, the same topic as in the training of the trainees in the study. They were asked to complete the questionnaire and give comments on it. The SPSS software was used to analyze the data from the pilot study. In order to check the reliability of the questionnaire, a statistical test was used. The items which were tested were Question 3 asking about respondents' opinions. The reliability of the questionnaire was 0.94. The obtained comments on the Thai language use were taken into account for revision. The pre-implementation questionnaire is in Appendix C.

3.3.2.2 A post-implementation questionnaire

A post-implementation questionnaire was developed from the pre-design questionnaire to investigate the sample's use, opinions, and reservations about using the Internet for TEFL. This questionnaire also contains a self-evaluation on basic computer skills and the Internet.

The questionnaire was modified from the pre-design questionnaire consisting of three parts asking (1) general use, (2) opinions in using the Internet in TEFL, and (4) the self-evaluation on basic computer skills and the Internet. In the part regarding general use, there were checklists for places and times for computer and Internet use and eight items with a three-point rating scale to answer how often the teachers used the Internet for each purpose. In the part regarding opinions in using the Internet in TEFL, nine items with a four-point rating scale were provided to answer about their opinions in using the Internet for their instruction and an open-ended question to express their reservations about using the Internet for their instruction. In the part regarding self-evaluation of basic computer skills and the Internet, there were twelve items with a five-point rating scale.

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3.3.2.3 An evaluation form of the created lessons

This evaluation form is a holistic evaluation by two experts in using Moodle for TEFL. The experts have been Moodle trainers for EFL teachers. The

experts were asked to evaluate the lessons which were the expected outcome of the training. The feedback and suggestions from the experts were given to the trainees so that they could use them to improve their lessons. The evaluation form is in Appendix E.

3.3.3 Research procedures

In this phase, the training course designed according to the model developed in Phase 2 was created, piloted and run. The following steps were employed.

3.3.3.1 The training objectives were identified as follows:

1. Create an online lesson by using Moodle
2. Apply modules provided in Moodle for their instruction

3.3.3.2 The trainees' characteristics were established.

According to the training objectives mentioned above, the trainees in the present study should have these two characteristics

1. The trainees should have experiences in teaching EFL in a secondary school. Their experiences would be beneficial for creating a lesson.
2. The trainees should have basic computer skills because they would learn higher skills of using a computer; that is, creating an online lesson.

3.3.3.3 The training content was defined.

In the present study, Moodle was selected as a part of the training content because it is a beneficial and widely-used CMS which promotes both synchronous and asynchronous learning activities. Moreover, Moodle is also user-friendly so that it is easy to learn.

Later, training materials were selected. The manual of creating online lessons by Moodle written by Dr. Wimonluck Singhanart was used in the training. The author is also the Moodle Thai version developer. The manual, therefore, is accurate for the Thai version of the CMS. It is also very well organized and easy to follow. The training package is in Appendix G.

3.3.3.4 A training pattern was selected.

According to the pre-design study, the most satisfactory training pattern is a one-shot course organized during a semester break. Since the training course aims to encourage the trainees to continue developing their online lessons after the one-shot course training, the researcher provides continuous technical support by visiting the trainees for a semester (approximately four months) after the training.

3.3.3.5 Teaching methods were selected.

Teaching methods are selected based on the training objectives and the training content. In the present study, two kinds of teaching principles were employed:

1. Mastery learning

Mastery Learning is an instructional method that presumes all learners can learn if they are provided with the appropriate learning conditions. Specifically, mastery learning is a method whereby learners are not advanced to a subsequent learning objective until they demonstrate proficiency with the current one. Mastery learning courses generally consists of discrete topics which all learners begin together. Learners who do not satisfactorily complete a topic are given additional instruction until they succeed. Learners who master the topic early engage in enrichment activities until the entire class can progress together. In the present study,

mastery learning was used. The trainees learned how to operate the software. Together with the software manual, the trainer demonstrated how to operate each function. The trainees, then, did the same thing. This kind of learning helps the trainees to learn the skill apart from watching the demonstration or reading the manual.

2. Reflective teaching

The reflective teaching approach is the model in which trainers and trainees collect data about their teaching and learning, examine their opinions and practices, and use the information obtained for critical reflection and continuous professional development. Reflective teaching is a key teaching method for this training. The trainer gave new knowledge to the trainees. The trainees then needed to combine their experiential knowledge and the knowledge obtained from the training to design and develop their own online lessons.

3.3.3.5 The training environment was defined.

The present training was an on-site training. That is, the training took place at the computer lab of Chalermkwanstree School where the server for the online database was located in order to avoid Internet connection problems. Moreover, it was convenient for the trainees to get their materials to design their online lessons.

3.3.3.7 The training management was determined.

In the training, the trainer taught how to operate the software, gave advice on how to create online activities, and helped the trainees when they encountered problems. In addition, a computer teacher, as the trainer's assistant, provided technical support only when the trainer was not available. In terms of technological infrastructure, the school was responsible for providing the server, computers, and the server administrator.

3.3.3.8 The evaluation methods were identified.

In this training, the trainees were asked to take a self-evaluation before the training and after the training. The trainees' online lessons, which were the expected outcome of the training, were evaluated by two experts in using Moodle in TEFL and creating online learning. In addition, the trainees were asked to evaluate their own computer skills using a self-evaluation form.

3.3.3.9 The follow-up management was selected.

In order to make continuous development, follow-up support was initiated. After the training, the trainer visited the school twice a week for 16 weeks (one semester) in order to give advice, help solve the trainees' technical problems, and encourage them to continue their lesson development.

3.3.3.10 The training materials were selected and created.

3.3.3.11 The instruments used in this phase were created.

3.3.3.12 The training course together with the instruments were piloted with the 35 summer M.A. students at Naresuan University to check the reliability of the research instruments.

3.3.3.13 The revised training package was implemented in the real setting at Chalermkwanstree School.

3.3.3.14 The researcher conducted a follow up for a semester.

3.3.3.15 After a semester, the created lessons were evaluated by the experts.

3.3.4 Data analyses

3.3.4.1 The data obtained from the pre-implementation questionnaire were analyzed using descriptive statistics, including frequency and percentage. The

data, including data from multiple choice items, rating scale items, and yes/no items, were coded and analyzed using the SPSS software. The answers obtained from the open-ended questions were read, the keywords coded, and finally the frequencies of each category counted.

3.3.4.2 The data obtained from the post-implementation questionnaire were analyzed using descriptive statistics, including frequency and percentage. The data, including data from multiple choice items, rating scale items, and yes/no items, were coded and analyzed using the SPSS software. The answers obtained from the post-implementation interview were read, the keywords coded, and finally the frequencies of each category counted.

3.3.4.3 Since the data from the evaluation form were qualitative, the evaluations were read and reported in writing.

3.4 Phase 4: Model Evaluation

This phase was to evaluate the model after the implementation. The revised model was sent to three experts in instructional design by e-mails to ask for comments and suggestions. The comments and suggestions were summarized and presented in writing.

In conclusion, this chapter presented research methodology of the present study including four phases: context analyses, model design, model implementation, and model evaluation. In each phase, population and sample, research instrumentation, research procedures, and data analyses were presented.

CHAPTER 4

THE RESULTS OF THE STUDY

The present study aimed to design, implement, and evaluate the teacher-training model in using the Internet for teaching English as a foreign language (TEFL). This chapter presents the results of the study using the five research questions as its organizing principle:

4.1 Context analyses

4.2 Model development

4.3 Model implementation

4.4 Model evaluation

4.1 Context Analysis

In this phase, information about EFL teachers in using the Internet for their instruction was explored in order to answer Research Question 1, how do EFL secondary school teachers in Thailand use the Internet for their instruction currently and what are their needs for training? This includes current use, opinions, feelings, perceptions on how the Internet could be used effectively, reservations, and needs for training. Moreover, problem analysis, learning standard analysis, and infrastructure analysis were also conducted in order to obtain crucial information for the development of a model design. The results of each topic are presented separately.

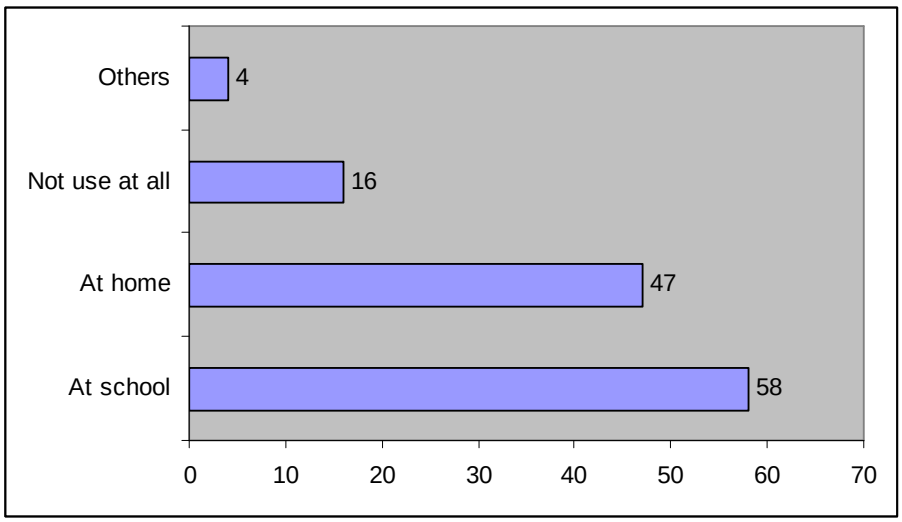
4.1.1 EFL use of the Internet

In this part, the EFL teachers answered two checklist questions to identify their places and times of the Internet use, and eight items with a three point rating scale to determine their purposes of use. The results of this part are as follow:

4.1.1.1 Places where EFL teachers use the Internet

As shown in Figure 4.1, from a total of 80, 58 teachers (72.5%) used the Internet at school, 47 (58.8%) at home, 4 (5%) at other places such as Internet cafés and public libraries, and 16 (20%) stated that they did not use the Internet at all.

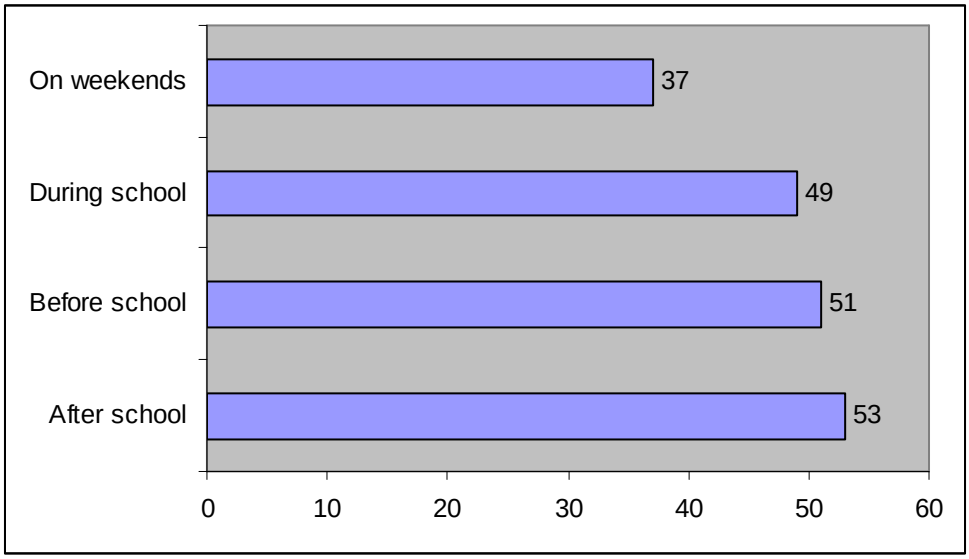
Figure 4.1 Places the Internet is used by the respondents (N = 80)



4.1.1.2 Times when computers with the Internet access at school are available

The 64 respondents (80% of the questionnaire respondents), who identified themselves as Internet users continued answering questions. As shown in Figure 4.2, most of the schools provided computers with Internet access for their teachers most of the time. From a total of 64, 53 teachers (66.3%) could use the computers with Internet access after school, 51 (63.8%) before school, 49 (61.3%) during school, and 37 (46.3%) on weekends.

Figure 4.2 Times teachers can use computers with Internet access at school (N = 64, Internet users only, 4 non-respondents)



4.1.1.3 Purposes of EFL teachers' use of the Internet

In order to better understand purposes for EFL secondary school teachers' use of the Internet, the survey included a question regarding what purposes they used the Internet for and also how often they used it either at home or at school. The data obtained were analyzed into the mean score and interpreted as follows: 2.51 – 3.00 means 'frequently'; 1.51 – 2.50 means 'occasionally'; and 1.00 – 1.50 means 'never.'

The results obtained for this question are shown in Table 4.1. That is, EFL secondary school teachers occasionally used the Internet for four educational purposes and never used it for four purposes. The four purposes for which the teachers occasionally used the Internet were (1) to create instructional materials, (2) to gather information for planning lessons, (3) to access research and best practices for teaching, and (4) to communicate with colleagues and other professionals. The four purposes for which the participants never used the Internet were (1) to access model lesson plans, (2) to make presentations for the classroom, (3) to communicate with

students outside classroom or classroom hours, and (4) to post homework or other class requirements or project information.

Table 4.1 Purposes for the teachers' Internet use

Purposes	Use at school		Use at home	
	M	**SD**	**M**	**SD**
a. create instructional materials (i.e. handouts, test, etc.)	1.81	0.56	1.68	0.64
b. gather information for planning lessons	1.94	0.54	1.78	0.72
c. access model lesson plans	1.34	0.6.	1.28	0.58
d. access research and best practices for teaching	1.80	0.60	1.62	0.66
e. make presentations for the classroom	1.20	0.44	1.17	0.42
f. communicate with colleagues/other professionals	1.72	0.52	1.58	0.61
g. communicate with student(s) outside the classroom/ classroom hours	1.27	0.48	1.22	0.52
h. post homework or other class requirements or project information	1.21	0.45	1.11	0.36

4.1.2 Teachers' opinions on advantages of the Internet

The teachers who identified themselves as Internet users were then ask to respond to nine 4-point scale items on advantages of the Internet with one open-ended question. The data obtained were analyzed into the mean score and interpreted as follows: 3.51 – 4.00 means 'strongly agree'; 2.51 – 3.50 means 'agree'; 1.51 – 2.50 means 'disagree'; and 1.00 – 1.50 means 'strongly disagree.'

As shown in Table 4.2, the teachers had positive opinions in using the Internet for TEFL. They believed that the Internet (1) could play important instructional role in a classroom, (2) could be used in my classroom to enhance the teaching of important skills, (3) was best used for drills, remedy, or reinforcement of facts, (4) was best used in classroom to promote students' analytical, creative, and other 'higher order' thinking skills, (5) could be used in my classroom to provide alternative learning approaches for students with learning difficulty, (6) was an appropriate for

some students, (7) could be used to make learning more interesting for all students, and (8) would not be disruptive to student learning and social development. Moreover, the teachers expressed their intention to learn and use the Internet to improve their teaching.

Table 4.2 Teachers' opinions on advantages of the Internet

Opinions	M	SD
a. The Internet can play an important instructional role in my classroom.	3.30	0.58
b. Using The Internet in my classroom is likely to be disruptive to student learning and social development.	2.48	0.60
c. The Internet can be used in my classroom to enhance the teaching of important skills.	3.17	0.58
d. The Internet are best used for drill, remediation, or reinforcement of facts.	3.28	0.55
e. The Internet are best used in classroom to promote students' analytical, creative, and other "higher order" thinking skills.	3.14	0.59
f. The Internet can be used in my classroom to provide alternative learning approaches for students who are having difficulty learning.	3.17	0.52
g. Using The Internet is an appropriate activity for some students.	3.23	0.58
h. The Internet can be used in my classroom to make learning more interesting for all students.	3.33	0.62
i. I would like to learn as much as possible about how to use computers and the Internet to improve instruction in my classroom.	3.50	0.59

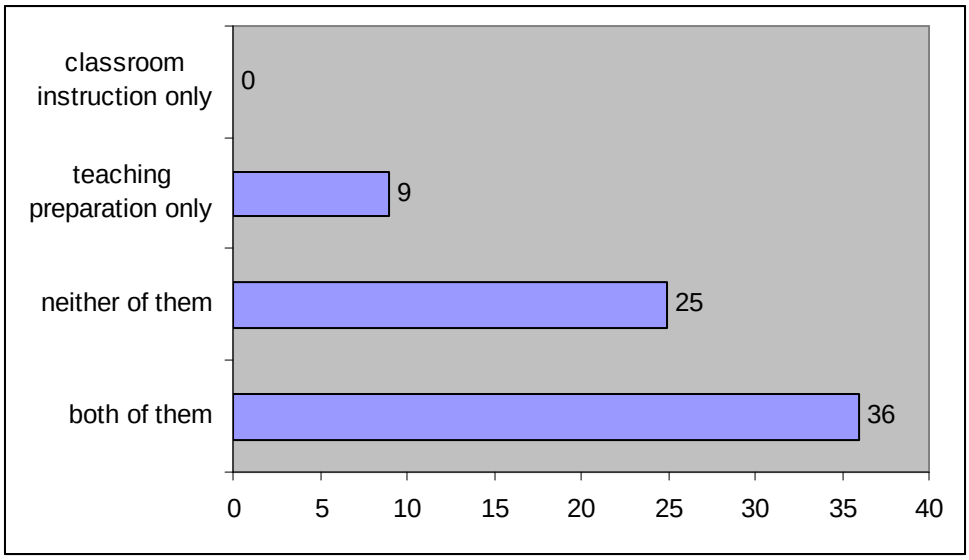
Only two teachers responded to the open-ended question. Their comments were (1) using the Internet in the classroom would not be effective or efficient without a high speed Internet access or proper technical support; and (2) the Internet should be used for outside class activities.

4.1.3 Teachers' feelings when using the Internet

In this part, the teachers answer two yes/no questions to determine whether they use the Internet for their teaching preparation and/or their classroom instruction.

The teachers who did so had to answer how they felt when using the Internet. As shown in Figure 4.3, 25 teachers (39.1%) used the Internet for both teaching preparation and 9 (14%) used it for teaching preparation only. However, it was found that 25 (39.1%) that identified they did not use it at all.

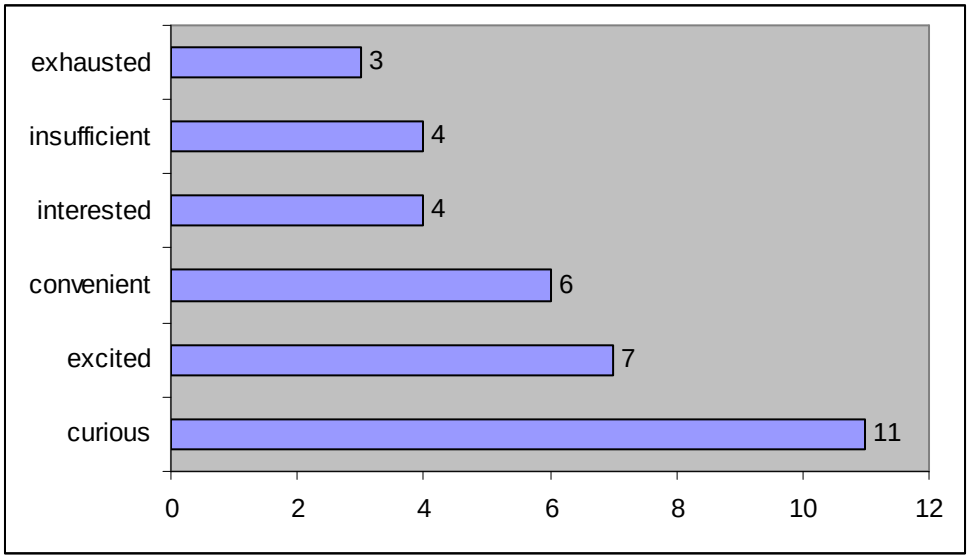
Figure 4.3 Teachers' use of the Internet for their instruction



The teachers who used the Internet for either their teaching preparation or classroom instruction were also asked an open-ended question about their feelings. Their answers were coded with the keywords and categorized into six groups as 'curious', 'excited', 'convenient', 'interested', 'insufficient', and 'exhausted.' Some answers containing words with similar meanings (e.g. eager = excited, tired = exhausted) were grouped in the similar-meaning categories. Figure 4.4 shows the response of the 36 teachers' feelings when they use The Internet. The 36 respondents here are the teachers who answered that they used the Internet for either teaching preparation or classroom instruction or both. They expressed four positive and two negative feelings. The four positive ones were represented by the words 'curious', 'excited', 'convenient', and 'interested' whereas two keywords showing negative

meaning were ‘insufficient’ and ‘exhausted.’ As shown in Figure 4.4, the teachers mostly felt ‘curious to learn and explore more’ about the Internet (F = 11; 30.6%) followed by feeling ‘excited about huge useful information’ (F = 7; 19.4%), ‘convenient with technology’ (F = 6; 16.7%), ‘that I have insufficient knowledge to use the Internet’ (F = 4; 11.1%), ‘interested in exploring and perceiving a cyber world’ (F = 4; 11.1%), and ‘exhausted because of spending too much time for searching’ (F = 3; 8.3%).

Figure 4.4 How teachers feel when they use The Internet (N = 36, Internet users for teaching preparation and/or classroom instruction only)

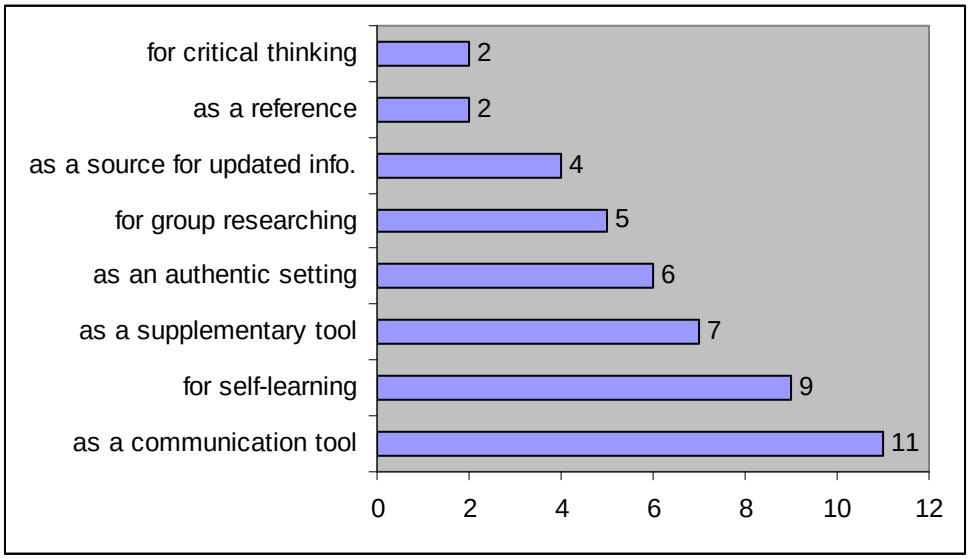


The teachers who did not use the Internet either for teaching preparation or classroom instruction are described later in the 4.1.5, teachers’ reservation on using the Internet.

4.1.4 Teachers' perception on most effective ways to use the Internet for TEFL

Once the teachers have experienced using the Internet, it is useful to see what they think are the most effective ways to use The Internet for EFL teaching. Sixty-four teachers who declared themselves Internet users were asked to answer an open-ended question. From a total of 64, only 27 teachers (42.2%) responded to this question. The answers were coded and categorized into eight ways. As shown in Figure 4.5, they mostly thought the Internet was effective to be used as a communication tool between teachers and students as well as among students themselves (F = 11; 40.7%). They thought that students could use the Internet for self-learning so that it should be a supplementary tool outside class (F = 9; 33.3%). Some teachers considered the Internet as a supplementary tool but could be used with purposes of the curriculum assigned by policy from the Thai Ministry of Education (F = 7; 25.9%). Others thought that the Internet could be used effectively as an authentic setting to practice English language skills (F = 6; 22.2%), while group research was considered an effective way in using the Internet (F = 5; 18.5%). 14.8% (F = 4) thought that the Internet could be used as a source of updated news and information, 7.4% (F = 2) thought that the Internet could be used as a reference, and 7.4% (F = 2) thought that the Internet can be used to teach critical thinking.

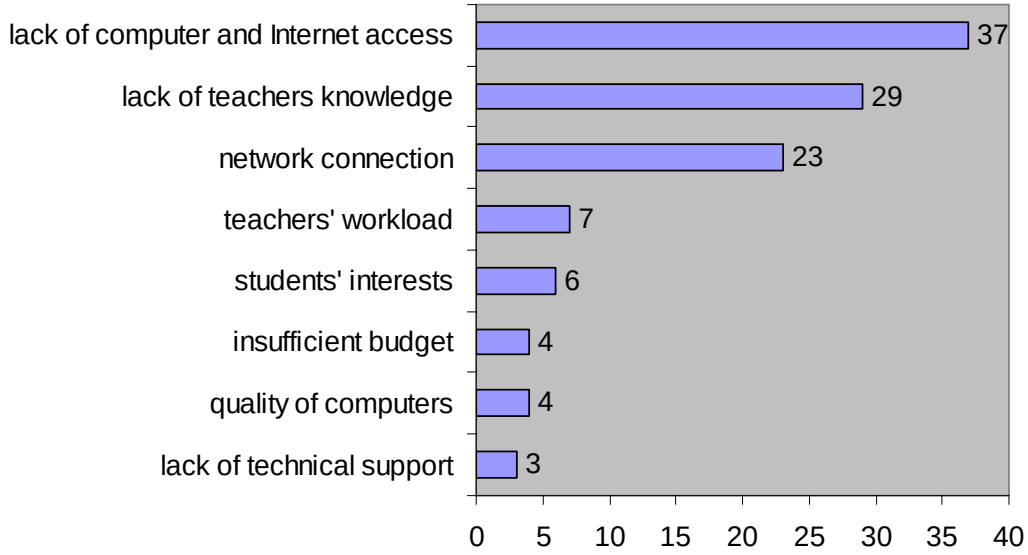
Figure 4.5 Teachers' perception on most effective ways to use the Internet in EFL teaching



4.1.5 Teachers' reservations about using the Internet for EFL teaching

All 80 teachers were asked an open-ended question on their reservations about using the Internet. Their answers were coded with the keywords, categorized, and frequencies counted. As shown in Figure 4.6, three main reservations were revealed: (1) lack of computers and Internet access (F = 37; 59.7%); (2) lack of knowledge in using the Internet for TEFL (F = 29; 46.7%); and (3) Internet connection problems, speed and quality (F = 23; 37.1%). Five minor reservations included (1) teachers' workloads (F = 7; 11.3%), (2) students using the Internet to chat or play games (F = 6; 7.7%), (3) insufficient maintenance budgets by schools (F = 4; 6.5%), (4) the quality of computers (F = 4; 6.5%), and (5) lack of technical support (F = 3; 4.8%).

Figure 4.6 Teachers' reservations about using the Internet in TEFL (N = 80, 18 non-respondents)



It should be noted that 25 teachers who did not use the Internet either for teaching preparation or classroom instruction had reservations about 'lack of computer and Internet access' and 'lack of knowledge.'

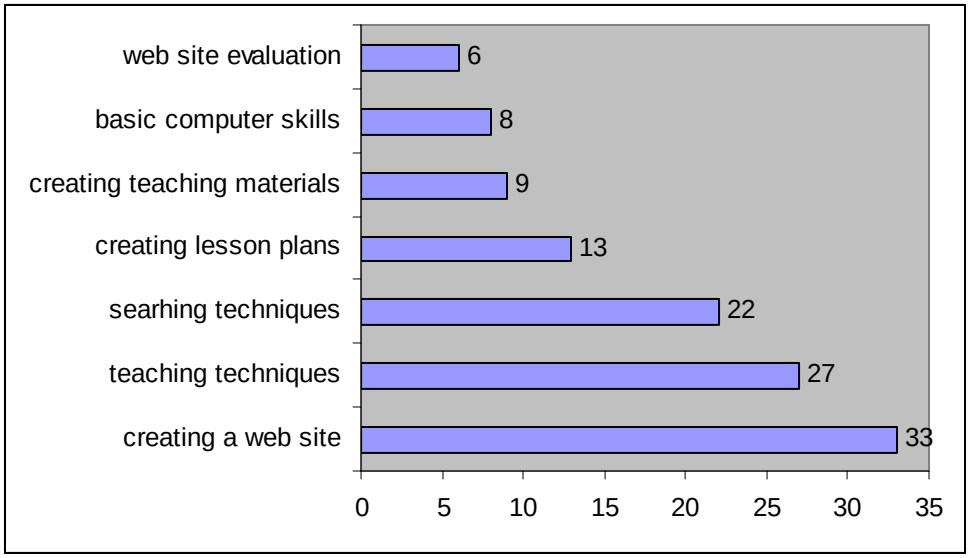
4.1.6 Teachers' needs for a training course in using the Internet

The last part of the pre-design questionnaire investigated teachers' needs for a training course in using the Internet. Three kinds of questions, an open-ended question, a multiple-choice question, and eleven 3-point rating-scale items were used.

With the open-ended question, the teachers were asked to raise any content topics they needed to learn more about using the Internet for their instruction. As shown in Figure 4.7, seven content topics the teachers felt they needed to learn were to create a web site (F = 33; 53.2%), followed by teaching techniques (F = 27; 43.5%), searching techniques (F = 22; 35.5%), creating lesson plans (F = 13; 20.9%),

creating teaching materials (F = 9; 14.5%), computer skills (F = 8; 12.9%), and Web site evaluation (F = 6; 9.7%).

Figure 4.7 Contents EFL teachers reported they needed to learn (N = 80, 16 non-respondents)



In addition, the teachers were also asked to answer to what extent they thought each content topic was necessary to be in a training course. The data obtained from the eleven 3-point rating scale items were analyzed into the mean score and interpreted as: 2.51 – 3.00 means 'very necessary'; 1.51 – 2.50 means 'necessary'; and 1.00 – 1.50 means 'unnecessary.'

As shown in Table 4.4, creating activities and gathering information from ESL/EFL websites were rated 'very necessary' (2.53 and 2.59) respectively. The other nine topics were perceived 'necessary' (mean scores were from 2.26 to 2.49). They were (1) basic computer skills, (2) basic skill in using e-mail, (3) basic skill in using the World Wide Web, (4) basic skill in using Web boards, (5) basic skill in

using chat rooms, (6) website creation, (7) website evaluation, (8) creating lesson plans, and (9) creating instructional materials.

Table 4.3 The necessities of the contents (N = 80, some non-respondents)

Content of the training course	M	SD
1. Basic computer skills	2.32	.76
2. Basic skills of using The Internet		
2.1 E-mail	2.47	.60
2.2 World Wide Web	2.47	.56
2.3 Web board	2.40	.52
2.4 Chat room	2.30	.64
3. Web site creation	2.40	.64
4. Web site evaluation	2.26	.68
5. How to integrate The Internet with TEFL		
5.1 Gathering information from ESL/EFL websites	2.59	.52
5.2 Creating lesson plans	2.39	.61
5.3 Creating activities	2.53	.55
5.4 Creating materials	2.49	.58

Furthermore, the teachers were asked about the time when they were most likely to attend a training course. As shown in Table 4.4, 60 teachers (77.9%) preferred to attend a one-shot intensive training course taking about five days during a semester break, 9 (11.7%) on weekends during a semester, 6 (7.8%) 2-3 hours after school during a semester, and 2 teachers (2.6%) needed a special break for such a course during a school semester.

Table 4.4 Time for a training course (N = 80, 3 non-respondents)

Time appropriate for training	Frequency	Percent
a. On weekends during school semester	9	11.7
b. 2-3 hours after school during a semester	6	7.8
c. 5 days for a one-shot intensive course during a semester break	60	77.9
d. other (special break during a school semester)	2	2.6

4.1.7 Problem analysis

The problem analysis revealed that the current teacher-training in technology use did not provide enough opportunities for teachers to apply the knowledge into their real instructional setting. Moreover, the training misled the trainees to focus on technology itself rather than the subject content. The trainers who were keen only on technology might not give enough advice or suggestions on integrating technology knowledge into real teaching situations.

4.1.8 Learning standard analysis

The learning standard stated that using information technology as a kind of learning media was expected. According to the bureau of academic affairs and Education Standards (2003). The Ministry of Education set up the learning standards for Thai secondary schools students. One stream of the learning standards was about educational technology. The standard related to educational technology did not apply to M1 students but M2 to M6 students. The standard and the sub-standards were as follow:

Standard 1.2 : Have English skills to exchange information and to express feelings and idea by using appropriate technology for life-long learning

Sub-standard 1 : Be able to use English in social situations to make an interpersonal relationship and make it continuous by using technological media provided in and outside schools.

Sub-standard 2 : Be able to express ideas and needs, offer help and service to other people, and make a study plan by using technological media provided in and outside schools.

Sub-standard 3 : Be able to request, give information, explain, describe, and compare things in daily life from experience and interest by making use of instructional media and skill practice.

Sub-standard 4 : Be able to express ideas about daily situations and future plan as well as to give reasons and find appropriate methods of foreign language learning by making use of instructional media and skill practice.

In conclusion, English teachers in secondary schools should be able to select and use appropriate technology for their instruction. Moreover, they should encourage their students to use it for life-long learning.

4.1.9 Infrastructure analysis

The infrastructure analysis was conducted to investigate the availability of computers and Internet access of the secondary school which joined the SchoolNet Project. The information obtained from this analysis affects the selection of technology. In the present study, the infrastructure analysis showed that

1. The secondary school which joined the SchoolNet Project has at least one server.
2. The secondary school which joined the SchoolNet Project has at least one computer lab containing at least 50 computers.

In conclusion, the school had the infrastructure for the training and the potential to encourage teachers to integrate technology into their instruction in the future.

4.2 Model Design

The phase was to answer Research Question 2, what are the elements and process of designing a teacher-training model in using the Internet for TEFL? The information obtained from Phase 1, the analyses of the literature, the data obtained from the unstructured interviews, and the data from the model evaluations were used to investigate the factors and the initial design of the teacher-training model in using the Internet for TEFL.

4.2.1 The analyses of the literature

4.2.1.1 Teacher-training models

According to Wallace (1991), there are three professional educational models. The most widely used model is the reflective teaching model. In the reflective model, the received knowledge derived from research findings is combined with experiential knowledge (which relates to trainees' practical on-going experience) to form so-called 'knowledge-in-action' (Komorowsha, 1994; Wallace, 1991).

The reflective teaching model is appropriate to be a conceptual framework to design a teacher-training model for various reasons.

1. The reflective teaching model can adopt the variety of the ESL/EFL field and focuses on personal development.
2. The reflective teaching model is practical. Teachers can convey their thoughts and feedback by giving reflection.
3. The reflective teaching model promotes professionalism which requires ongoing development.
4. The reflective teaching model crates a cyclical process allowing time for reflection, implementation, and follow-up.

While researchers and experts on the reflective teaching model focus on the combination of experiential knowledge and received knowledge, the other factors in designing a training course might be forgotten, such as the content of training, the needs of the trainees, and so on. It is, therefore, important to clarify each step of designing a training course based on the reflective teaching model.

To make the reflective teaching model look clearer and easier to apply does not mean that a brand-new model must be designed. The reflective teaching model could be modified while the essential characteristics still remain. The modified model would assist a course designer to create a teacher-training course with the idea of reflective teaching.

4.2.1.2 Educational technology training in Thailand

The literature revealed that there have many technology training courses for teachers in Thailand with many significant characteristics as follows:

1. Training courses focused too much on technology. Many training courses aimed to train how to use technology itself. The participants or trainees were expected to be able to use the training programs. This is a disadvantage of such training because the participants might not be able to adapt or adopt the technology use into their real instructional settings.

2. Participants were from all subject areas. Since the training courses focused on technology learning, teachers of various subjects with different computer backgrounds could be recruited in the same training. In such a case, the participants lacked opportunities to exchange their ideas of making use of teaching in their own subject areas. They paid attention to only technology know-how itself.

3. Trainers were experts in technology. Since the focus of the training courses was technology know-how, the trainers were keen on technology with little knowledge of how to integrate technology into every subject content. Without sound advice or suggestions on TEFL from the trainers, the training participants might not be able to apply the technology in their real instructional settings.

4. Training courses were one-shot training. There was no follow-up after the training. Without the follow-up, it could not be guaranteed that the trainees would adapt or adopt their knowledge into their real teaching.

The analyses of teacher-training models and educational technology training in Thailand clearly revealed that there were problems in teacher-training in using the Internet for TEFL. First, there were no clear teacher-training models which training organizers can follow. Second, there were also no training courses particularly tailored for EFL teachers, so they could only learn how to use technology. They had no clear ideas of how to implement technology into their instruction. It is therefore, necessary to create a teacher-training model in using the Internet for TEFL. The advantages of the training model are that:

1. The teacher-training model in using the Internet for teaching EFL could help a training organizer to set up a training course which is appropriate for EFL teachers.

2. With the created model, the trainees would learn not only the technological skills but also how to integrate technology into their authentic settings.

3. The trainees would understand that their own subject content is the most important part of using educational technology—not the technology itself.

4.2.2 Factors in teacher-training in using the Internet for TEFL

In order to conduct a teacher-training in using the Internet for TEFL, many factors should be taken into account. Each of the factors interacts and has impacts on the others as shown in figure 4.8.

4.2.2.1 Training institutes

Training institutes can be a school, a university, and other educational institutes which aim to develop their online learning environment. The institutes should make a master plan which promotes a continuous development because a dynamic learning environment cannot be created in a short time. Concrete plans about budget and management are also required.

4.2.2.2 Availability of computers and Internet access

To conduct technological training, the availability of computers and Internet access is crucial. The quality of the computer and server is also important. Low-quality computers and low-speed Internet connections can be costly in terms of time, energy, and mentality. For example, when the connection is slow, the program users, the trainees, and their students alike get bored and finally give up using the program. Moreover, a low-quality server may not have enough memory for storing databases.

4.2.2.3 Trainers

Trainers must be knowledgeable in TEFL because they must give advice on creating language learning activities online. Moreover, the trainers must be familiar with training content as some technical problems might occur during and/or after the training. The trainers, therefore, must be able to solve some other related problems such as the server breakdown, software errors, and so on.

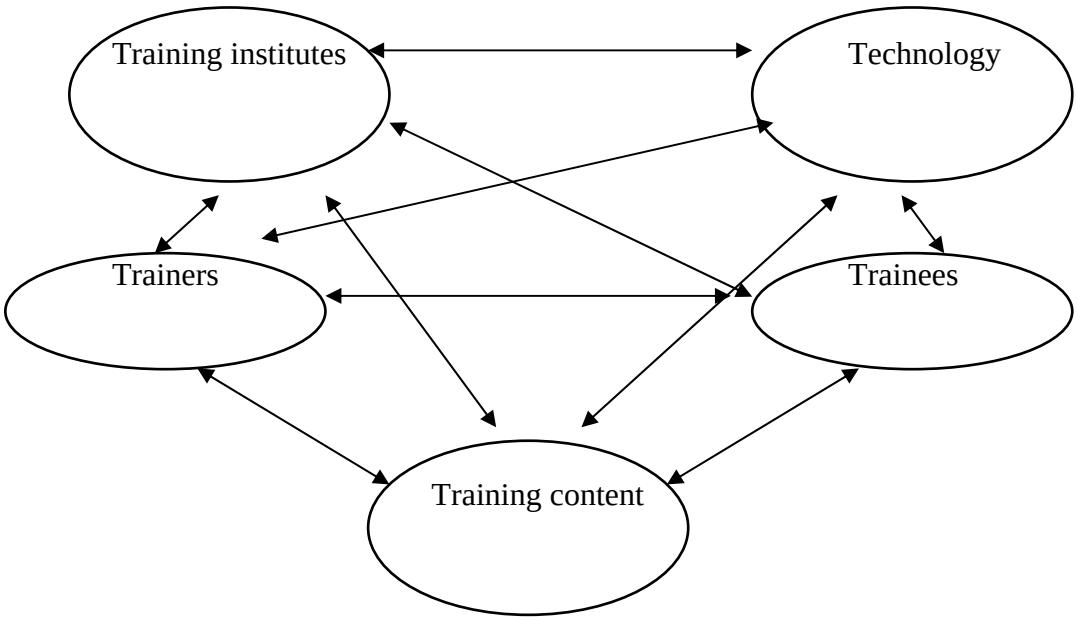
4.2.2.4 Trainees

Trainees should have basic computer skills. Without the skills, they may not be able to learn higher skills. Moreover, the trainees must be willing to devote their time for continuous development of their lessons and keeping them dynamic at all time. That is, they need to update learning activities, encourage their students to use the lessons both inside and outside classrooms, and give feedback to their students consistently.

4.2.2.5 Training contents

Since teachers tend to employ the training knowledge when they perceive that they need to use it, it is very important for a training course designer to investigate the needs of target groups before designing a course.

Figure 4.8 Factors in teacher-training in using the Internet for TEFL



4.2.3 Prototyped model and its steps

In designing the training model, eight steps were derived from the analyses of theories in instructional design, literature in teacher-training in technology use, and the results of the pre-design questionnaire. They were described in three parts (input, process, and output and feedback) as shown in Figure 4.9

Part 1 : Input

In the part of Input, there were two steps, (1) context analyses, and (2) model design.

Part 2 : Process

In the process part, there were three steps, (3) the creation of the training package, (4) the pilot of the training package, and (5) the implementation of the training package.

Part 3 : Output and feedback

In this part, there were two steps, (6) the output evaluation, (7) the model's evaluation, and (8) the model's revision.

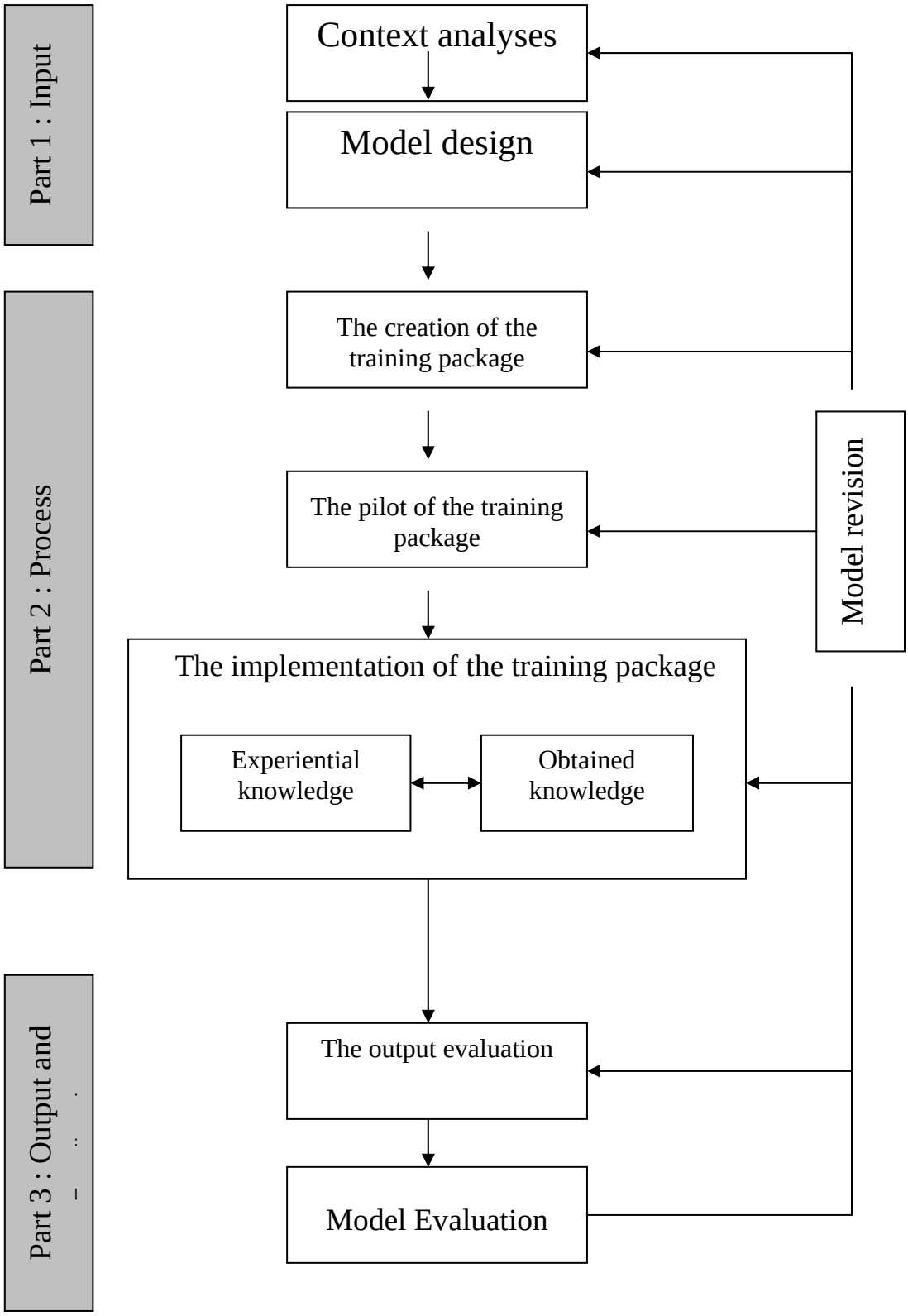


Figure 4.9 Prototyped Model and Its Steps

4.2.4 The model evaluation from the experts

Both the elements and the steps of the teacher-training model were sent to the experts. The three experts in instructional design were asked to evaluate the appropriateness of the model factors and the steps of the model with the five rating scale items. The data from the evaluation form, then, were analyzed into the mean score and interpreted as follows:

4.51 – 5.00 means ‘most appropriate’

3.51 – 4.50 means ‘very appropriate’

2.51 – 3.50 means ‘appropriate’

1.51 – 2.50 means ‘somewhat appropriate’

1.00 – 1.50 means ‘inappropriate’

As shown in Table 4.5. the model was rated from ‘very appropriate’ to ‘most appropriate’. Three items perceived ‘most appropriate’ (mean score was 4.67) were (1) the model evaluation, (2) the model revision and (3) the steps of the model elements. Other eight items perceived ‘very appropriate’ (mean scores were from 3.67 to 4.33) were (1) the context analyses and the sub elements, (2) the model design and the sub elements, (3) the creation of the training package and the sub elements, (4) the pilot of the training package, (5) the implementation of the training package and the sub elements, (6) the model evaluation and the sub elements, (7) the directions and the relationship of the model elements, and (8) the prototype model.

Table 4.5 The appropriateness of the teacher-training model

The appropriateness of the model	M	S.D	Level of appropriateness
The steps of the Input part			
1. The context analyses	4.33	0.58	Very appropriate
2. The model design	4.00	0	Very appropriate
The steps of the process part			
3. The creation of the training package	3.67	0.58	Very appropriate
4. The pilot of the training package	3.67	0.58	Very appropriate
5. The implementation of the training package	3.67	0.58	Very appropriate
The steps of the Output and Feedback part			
6. The output evaluation	4.33	0.58	Very appropriate
7. The model evaluation	4.67	0.58	Most appropriate
7. The model revision	4.67	0.58	Most appropriate
8. The appropriate of factors	4.67	0.58	Most appropriate
9. The directions and the relationship of the model factors	4.33	0.58	Very appropriate
10. The prototype model	4.33	0.58	Very appropriate

4.3 Model Implementation

In order to answer Research Question 3, after the implementation of the model, how does the teacher-training model affect the teachers' use of the Internet for TEFL?, the trainees were asked to answer the pre-implementation questionnaire and the post-implementation questionnaire investigating their use, opinions, reservations about using the Internet for their instruction, and self-assessments before and after the training. Moreover, the summary of the trainees' created lessons together with the experts' evaluation was investigated. The results of each topic are presented separately.

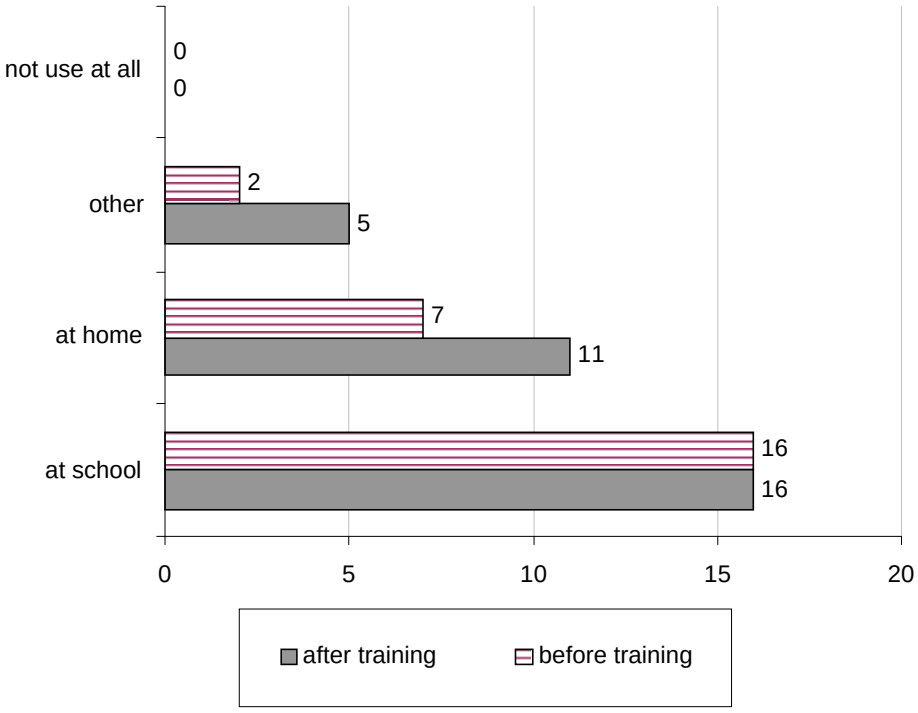
4.3.1 The trainees' use of the Internet

In this part, the trainees answered two checklist questions to identify their places and times of the Internet use, and eight items with a three point rating scale to determine their purposes of use. The results of this part are as follow:

4.3.1.1 Places where the trainees use the Internet

In order to identify where the trainees use the Internet, they were allowed to select more than one choice on the checklist. As shown in Figure 4.10, from a total of 16, before training all teachers use the Internet at school, 7 (43.8%) at home, and 2 (12.5%) at other places such as Internet cafes and the school library while after training, all trainees used the Internet at school, 11 (68.8%) at home and 5 (31.3%) at other places such as Internet cafes and the school library.

Figure 4.10 Places the trainees use the Internet



4.3.1.2 Time when computers with the Internet access at school are available

Since the trainees worked at the same school, which is Chalermkwanstree School, the answers from the trainees were the same. That is, they could use the computers with the Internet access before, during, after school time, and on weekends.

4.3.1.3 Purposes of the trainees' use of the Internet

In order to better understand purposes for the trainees' use of the Internet, the pre-implementation questionnaire and the post-implementation questionnaire included a question regarding what purposes they used the Internet for and also how often they used it either at home or at school. The data obtained were analyzed into the mean score and interpreted as follows: 2.51 – 3.00 means 'frequently'; 1.51 – 2.50 means 'occasionally'; 1.00 – 1.50 means 'never.'

As shown in Table 4.6, after the training the trainees used the Internet more than they had done before the training. In details, before the training, they 'occasionally' used the Internet for three educational purposes (mean scores were from 1.94 to 2.31), and 'never' used the Internet for five purposes (mean scores were from 1.00 to 1.38). The three purposes for which the trainees occasionally used the Internet were (1) to create instructional materials (i.e. handouts, test, etc.); (2) to gather information for planning lessons; and (3) to communicate with colleagues and other professionals. The five purposes for which the trainees never used the Internet are (1) to access model lesson plans; (2) to access research and best practices for teaching; (3) to make presentations for the classroom; (4) to communicate with

students outside classroom hours; and (5) to post homework or other class requirements or project information.

After the training, at school, the trainees ‘frequently’ used the Internet for two educational purposes (mean scores were from 2.63 to 2.88). theses purposes were (1) to create instructional materials (i.e.handouts, test, etc.) and (2) to gather information for planning lessons. The trainees ‘occasionally’ used it at school for five purposes (mean scores were from 1.63 to 2.44). these purposes were (1) to access model lesson plans, (2) to make presentations for the classroom, (3) to communicate with colleagues and other professionals, (4) to communicate with students outside classroom or classroom hours, and (5) to post homework or other class requirements or project information. However, they ‘never’ used the Internet at school to access research and best practices for teaching (mean score was 1.50). The trainees ‘occasionally’ used the Internet at home for five educational purposes (mean scores were from 1.56 to 2.06). These purposes were (1) to create instructional materials, (2) to gather information for planning lessons, (3) to communicate with colleagues and other professionals, (4) to communicate with students outside classroom or classroom hours, and (5) to post homework or other class requirements or project information. However, the trainees ‘never’ used the Internet at home for three purposes (mean scores were from 1.13 to 1.50). These purposes were (1) to access model lesson plans, (2) to access research and best practices for teaching, and (3) to make presentations for the classroom.

Table 4.6 Purposes for the trainees' Internet use

Purposes	Before training				After training			
	Use at School		Use at home		Use at school		Use at home	
	M	SD	M	SD	M	SD	M	SD
a gather information for planning lessons	2.31	.60	1.56	.81	2.63	.50	1.56	.63
b access model lesson plans	1.25	.45	1.00	.00	1.63	.62	1.13	.34
c access research and best practices for teaching	1.25	.58	1.00	.00	1.50	.63	1.38	.62
d create instructional materials (i.e.handouts, test, etc.)	1.94	.44	1.38	.62	2.88	.34	2.06	.85
e make presentation for the classroom	1.25	.68	1.00	.00	2.06	.68	1.50	.73
f communicate with colleagues/other professionals	2.13	.72	1.56	.73	2.31	.70	1.81	.75
g communicate with student(s) outside the classroom/classroom hours	1.00	.00	1.00	.00	2.38	.50	1.75	.86
h post home work or other class requirement or project information	1.00	.00	1.00	.00	2.44	.51	1.94	.68

4.3.2 Trainees' opinions on advantages of the Internet

In this part, the trainees were asked to respond to nine 4-point scale items on advantages of the Internet. The data obtained were analyzed into the mean score and interpreted as follows: 3.51 – 4.00 means 'strongly agree'; 2.51 – 3.50 means 'agree'; 1.51 - 2.50 means 'disagree'; and 1.00 – 1.50 means 'strongly disagree.'

As shown in Table 4.7, the trainees had positive opinion both before and after the training. The trainees highly expressed their intention to learn and use the Internet. They believed that the Internet (1) could play an important instructional role in their classrooms, (2) could be used in the classroom to enhance the teaching of important skills, (3) was best used for drills, remedy, or reinforcement of facts, (4) was best used in classroom to promote students' analytical, creative, and other 'higher

order' thinking skills, (5) could be used in classroom to provide alternative learning approaches for students with learning difficulty, (6) was an appropriate activity for some students, and (7) could be used to make learning more interesting for all students and (8) would not be disruptive to student learning and social development.

Moreover, after the training they strongly agreed that the Internet could be used in their classrooms to make learning more interesting for all students.

Table 4.7 Trainees' opinion on the advantages of the Internet

	Opinions	Before training		After training	
		M	**SD**	**M**	**SD**
a.	The Internet can play an important instructional role in my classroom.	3.38	.50	3.44	.51
b.	Using The Internet in my classroom is likely to be disruptive to student learning and social development.	2.38	.50	2.25	.45
c.	The Internet can be used in my classroom to enhance the teaching of important skills.	3.00	.52	3.19	.54
d.	The Internet are best used for drill, remediation, or reinforcement of facts.	3.06	.25	3.31	.48
e.	The Internet are best used in classroom to promote students' analytical, creative, and other "higher order" thinking skills.	2.81	.40	3.13	.50
f.	The Internet can be used in my classroom to provide alternative learning approaches for students who are having difficulty learning.	2.88	.39	3.00	.37
g.	Using The Internet is an appropriate activity for some students.	3.06	.25	3.13	.34
h.	The Internet can be used in my classroom to make learning more interesting for all students.	3.44	.51	3.63	.50

i.	I would like to learn as much as possible about how to use new computers and The Internet to improve instruction in my classroom.	3.75	.45	3.81	.40

4.3.3 Trainees' reservations about using the Internet

All 16 trainees were asked an open-ended question on their reservations about using the Internet. Their answer were coded with the keywords, categorized, and frequencies counted. As shown in Table 4.8, before the training, three main reservations were revealed: (1) teachers' workloads (F = 13; 81.3%)' (2) lack of teacher knowledge in using the Internet for EFL teaching (F = 10; 62.5%) and (3) lack of computer and Internet access (F = 8; 50%). Two minor reservations were (1) lack of technical support (F = 5; 31.3%), and (2) the quality of computers (F = 2; 12.5%) while after the training, three main reservations were (1) teachers' workload (F = 16; 100%); (2) the lack of computer and Internet access (F = 12; 12%), and (3) the quality of the Internet connection (F = 8; 50%). The three minor concerns were (1) the quality of computers (F = 5; 31.3%), (2) the students' ability to use computers (F = 3; 18.8%), and (3) the expectation from the school (F = 2; 12.5%).

Table 4.8 Trainees' reservations about using The Internet

	Reservations	After training	Before training
1.	teachers' workload	16	13
2.	lack of computers and Internet	12	8
3.	lack of knowledge	0	10
4.	lack of technical support	0	5
5.	quality of Internet connection	8	0
6.	quality of computers	5	2
7.	students' ability to use computers	3	0
8.	expectation from the school	2	0

4.3.4 Trainees' self-evaluation

The trainees were asked to evaluate their skills of using the Internet for TEFL both before and after the training. The evaluation form was a part of the pre-implementation and the post-implementation questionnaire. The trainees answered the 5-point rating scale questions. The data obtained were analyzed into the mean score and interpreted as follows:

4.51 – 5.00 means 'highly skillful'

3.51 – 4.50 means 'very skillful'

2.51 – 3.50 means 'skillful'

1.51 – 2.50 means 'somewhat skillful'

1.00 – 1.50 means 'unskillful'

The data of the pre-training evaluation and the post-training evaluation were compared and shown in Table 4.9. Before the training, the trainees perceived that they were 'skillful' at four tasks, 'somewhat skillful' at four tasks, and 'unskillful' at four tasks. They were skillful at (1) searching for information, (2) gathering useful information, (3) downloading a file, and (4) communicating via e-mails. They were somewhat skillful at (1) evaluating website, (2) uploading a file, (3) using a web board, and (4) applying online information to teaching. They were unskillful at (1) posting teaching materials. (2) Posting homework, (3) using a chat room, and (4) designing online activities. However, after the training, the trainees perceived that they were 'very skillful' at four tasks and 'skillful' in eight tasks. They were very skillful at (1) posting teaching materials, (2) downloading a file, (3) using a web board, and (4) communication via e-mails. They were skillful at (1) searching for information, (2) evaluating websites, (3) gathering useful information, (4) posting

homework, (5) uploading a file, (5) using a chat room, (6) applying online information to teaching, and (7) designing online activities.

Based on the mean scores, a significant difference in three skills was found. These skills were 'posting teaching materials', 'posting homework', and 'uploading a file.' In conclusion, the trainees evaluated themselves to be more skillful in all tasks after the training.

Table 4.9 Self-evaluation on using the Internet for TEFL

Tasks	Before training		After training	
	M	**SD**	**M**	**SD**
1. To search for information	2.88	0.96	3.50	0.82
2. To evaluate websites	2.13	0.81	3.31	0.60
3. To gather useful information	3.13	0.50	3.19	0.54
4. To post teaching materials	1.00	0.00	3.75	0.58
5. To post homework	1.00	0.00	3.19	0.75
6. To upload a file	1.69	0.87	3.31	0.48
7. To download a file	2.75	0.68	4.06	0.57
8. To use a web board	2.06	0.68	3.63	0.50
9. To use a chat room	1.44	0.51	2.63	0.62
10. To communicate via e-mails	3.00	1.15	4.19	0.75
11. To apply online information to teaching	2.00	0.73	3.19	0.40
12. To design online activities	1.25	0.45	3.50	0.82

4.3.5 The summary of the trainees' created lessons

Table 4.10 shows the summary of the created lessons. A total of 13 lessons were developed. Each of three courses was developed by two trainees whereas each of the other ten lessons was developed by one trainee. In each lesson, there were at least three topics of the course content.

Table 4.10 The summary of the trainees' created lessons

No.	Course	Number of			
		Developers	Topics	Handouts	Activities
1	English 7.1	1	5	4	5
2	English 7.1 (1)	1	5	5	6
3	English 8	1	3	3	4
4	English 9	1	4	4	5
5	English 10.1 (1)	2	5	5	4
6	English 11.1	2	3	3	3
7	English 12.2	2	3	3	3
8	Reading and Writing English 1	1	4	4	1
9	Reading and Writing English 2	1	3	3	1
10	Reading and Writing English 3	1	3	3	1
11	English for Daily Life	1	7	5	14
12	English for My phitsanulok	1	4	3	4
13	English for Further Study and Future Career	1	3	3	3

4.3.6 The experts' evaluation of created lessons

As described in Chapter 3, the trainees' work resulted from the training (the created online lessons) was evaluated by two experts in using Moodle for TEFL. The evaluation covered the appropriateness of course display, content, and activities. The evaluation of each topic is presented below.

4.3.6.1 The appropriateness of the course display

Although the trainees were provided with the same Moodle template for all of the courses, they could put graphics (images and animations) onto their course pages in order to make them more attractive. At this point, the experts evaluated the course display based on the quantity and the quality of graphics used.

As for the quantity of the graphics, the experts evaluated that the lessons contained an appropriate quantity of graphics. Each page of the lessons did not have too few or too many graphics.

As for the quality of the graphics, the experts evaluated that most graphics were related to the content of the courses. Only one course, 'English for my Phitsanulok,' contained very meaningful graphics.

The experts gave some suggestions for improvement as follows:

1. Use graphics which are more closely related to the content. For example, in ‘English 7’ and ‘English 7(1)’, the picture of a family tree should be attached to the handouts because only a list of vocabulary is not interesting enough to draw students’ attentions.

2. Replace black-and-white images with colored images. For example, in ‘English 11.1’, the images were put up to give meanings of the vocabulary of weather. All of them were black and white, which were meaningful but boring images.

4.3.6.2 The appropriateness of the content

Based on the course syllabuses, the experts evaluated that the created lessons presented the content that appropriately matched both the course objectives and the topic objectives. Most of the courses had appropriate content in terms of objectives and difficulty level of language. However, some reading passages retrieved from the Internet might be too difficult for students. For example, in ‘English 12.1’, the passage about AZIMO contained complex grammatical structures that might be too difficult for M6 students.

Some suggestions made by the experts on the content presentation were as follows:

1. The content should be presented in a variety of presentations. All of the courses presented their content on a normal web page, which was boring. The content should be presented in PowerPoint, Flash, or some other presentation programs that would make the content more attractive.

2. The content retrieved from the Internet should be carefully selected. It was good to make use of teaching materials that are available online, provided that language level was taken into account.

4.3.6.3. The appropriateness of the activities

A variety of activities is one advantage of online learning. Moodle allows the trainees to create online activities in different ways. The experts evaluated that the created activities, such as games, chat, and pre-test and post-test, were appropriate, in some courses, very interesting activities were created. The students could do the tasks and get instant feedback. For example, puzzle games were created to check students' vocabulary. They were fun and exciting because they showed the scores immediately after the games.

However, the experts recommended that a variety of activities should be used for the lessons to be more challenging. For example, there were 14 activities in 'English for Daily Life', but they were all in a form of a pre-test and a post-test of each topic. Games, web boards, and chats could be used to avoid boredom.

4.4 Model Evaluation

In order to answer Research Question 4, does the model work effectively?, the model was revised after the implementation and then sent to three experts to ask for their evaluation, comments and suggestions. The results of each part were presented separately:

4.4.1 Revisions after the model implementation

After the model implementation, the model was revised as follows:

1. The sub-steps were added into the model in order to be easily understood as shown in Figure 4.11.
2. The description of each step was written in detail.

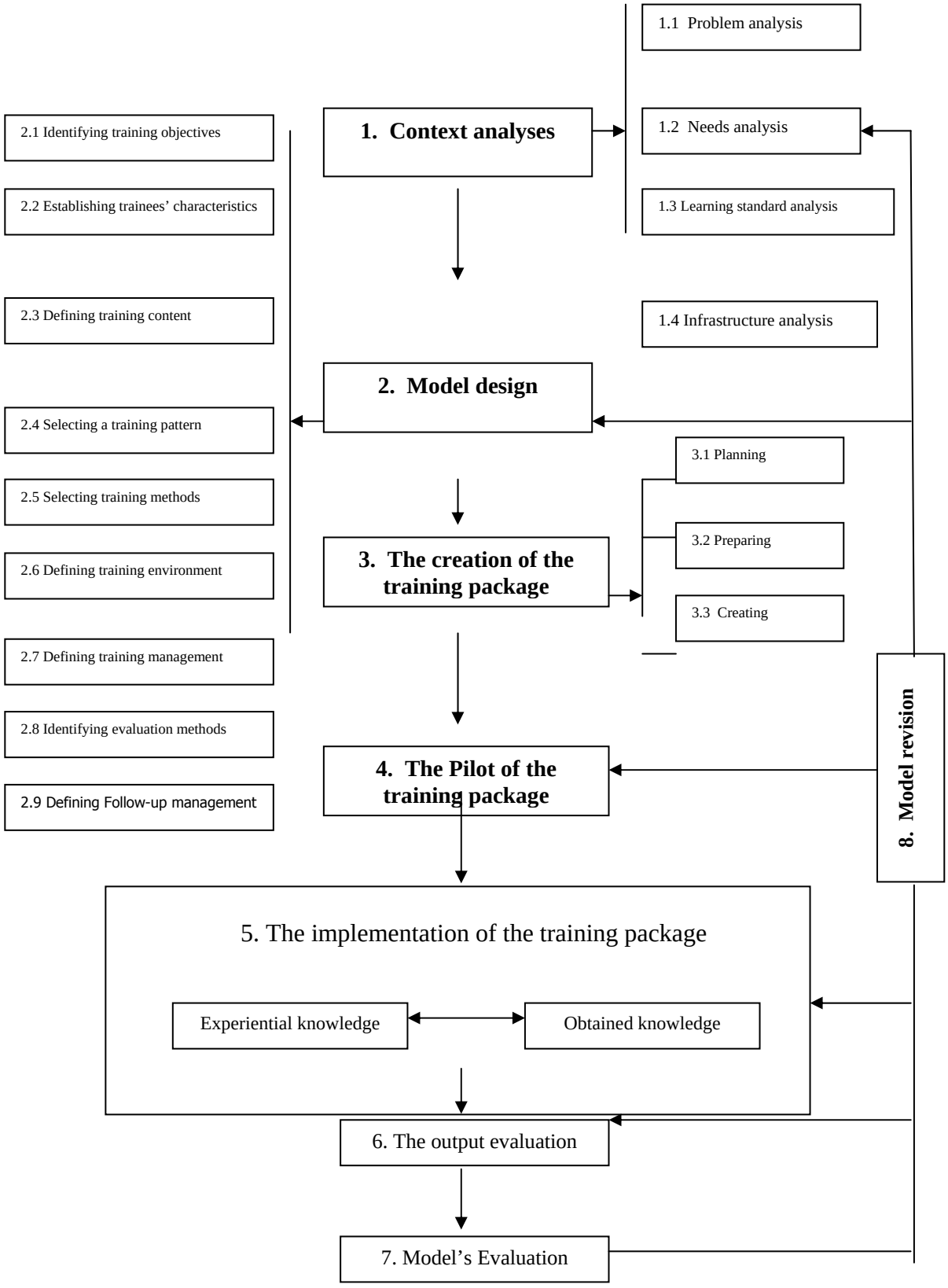


Figure 4.11 The Revised Model

4.4.2 The model evaluation by the experts

The revised model was sent to three experts in instructional design by e-mails to ask for comments and suggestions. The comments and suggestions were as follows:

1. Overall, the model works effectively.
2. The model covered general factors and was presented clearly.
3. Some other factors such as administrative policy should be mentioned in the model
4. The descriptions and explanations of the steps and terms used in the model should be written.

In conclusion, this chapter presented the results of each phase of the study. The results of Phase 1(Context Analyses) presented current use, opinions, feelings, perceptions on how the Internet could be used effectively, reservations, and needs for training. Moreover, the problem analysis, the learning standard analysis, and the infrastructure analysis were also conducted in order to obtain crucial information for a development of a model design. Phase 2 (Model Design) presented the analyses of literature and the prototyped model together with the evaluation. Phase 3 (Model implementation) presented the results obtained during and after the model implementation. These included the trainees' use, opinions, reservations about using the Internet for their instruction, and self-assessments before and after the training. Moreover, the summary of the trainees, created lessons together with the experts' evaluation was presented. Finally, in Phase 4 (Model Evaluation), the revisions after the implementation, experts' evaluation, comments, and suggestions from the experts were presented.

CHAPTER 5

THE MODEL'S DESIGN

This chapter presents the design of a teacher-training model in using the Internet for teaching English as a foreign language (TEFL). There are four parts of the design as follows:

5.1 Introduction

5.2 The analysis of teacher-training models and an analysis of educational technology training in Thailand

5.3 The teacher-training model in using the Internet for TEFL

5.4 Usability

5.1 Introduction

There are some unanswered questions in the world of teacher education in technology use such as a lack of proper models and a gap between a course and practice. In Thailand, a training course is highly required since it is currently an age of educational reform, and technology plays an important role in this new age. The training course is not only for pre-service teachers but also for professional development of the current teachers in Thailand. Moreover, there is still an unanswered question of how to integrate knowledge received from a course with experiential knowledge. This study, therefore, attempted to design and develop a teacher-training model to enhance an instructor's use of the Internet for TEFL.

The model was designed according to these four following steps:

Step 1: The analysis of a teacher-training model and the analysis of teacher-training courses in Thailand

Step 2: The synthesis of a teacher-training model in using the Internet for TEFL

Step 3: The model's creation

Step 4: The mode's testing and evaluation

5.2 The Analysis of a Teacher-Training Model in Using the Internet for Teaching EFL

According to the review of literature, there have been no specific teacher-training models in using technology for instruction. The general related literature in teacher-training models and the situation of technology training in Thailand was analyzed.

5.2.1 The analysis of teacher-training models

According to Wallace (1991), there are three professional educational models. The most widely used model is the reflective teaching model. In the reflective model, the received knowledge derived from research findings is combined with experiential knowledge (which relates to trainees' practical on-going experience) to form so-called 'knowledge-in-action' (Komorowska, 1994; Wallace, 1991).

The reflective teaching model is appropriate to be a conceptual framework to design a teacher-training model for various reasons.

1. The reflective teaching model can adopt the variety of the ESL/EFL field and focuses on personal development.
2. The reflective teaching model is practical. Teachers can convey their thought and feedback by giving reflection.
3. The reflective teaching model promotes professionalism which requires ongoing development.
4. The reflective teaching model creates a cyclical process allowing time for reflection, implementation, and follow-up.

While researchers and experts on the reflective teaching model focus on the combination of experiential knowledge and received knowledge, the other factors in designing a training course might be forgotten, such as the content of training, the needs of the trainees, and so on. It is, therefore, important to clarify each step of designing a training course based on the reflective teaching model.

To make the reflective teaching model look clearer and easy to apply does not mean that a brand-new model must be designed. The reflective teaching model could be modified while the essential characteristics still remain. The modified model would assist a course designer to create a teacher-training course with the idea of reflective teaching.

5.2.2 The analysis of educational technology training in Thailand

The literature revealed that there have been many technology training courses for teachers in Thailand with many significant characteristics as follows:

1. Training courses focused too much on technology. Many training courses aimed to train how to use technology itself. The participants or trainees were

expected to be able to use the training programs. This is a disadvantage of such training because the participants might not be able to adapt or adopt the technology use into their real instructional settings.

2. Participants were from all subject areas. Since the training courses focused on technology learning, teachers of various subjects could be recruited in the same training. In such a case, the participants lacked opportunities to exchange their ideas of making use of teaching in their own subject areas. They paid attention to only technology know-how itself.

3. Trainers were experts in technology. Since the focus of the training courses was technology know-how, the trainers were keen on technology with little knowledge of how to integrate technology into every subject content. Without advice or suggestions from the trainers, the training participants might not be able to apply the technology in their real instructional settings.

4. Training courses were one-shot training. There was no follow-up after the training. Without the follow-up, it could not guarantee that the trainees would adapt or adopt their knowledge into their real teaching.

The analyses of teacher-training models and educational technology training in Thailand clearly revealed that there were problems in teacher-training in using the Internet for TEFL. First, there were no clear teacher-training models which training organizers can follow. Second, there were also no training courses for EFL teachers, so they could only learn how to use technology. They had no clear idea of how to implement technology into their instruction. It is, therefore, necessary to create a teacher-training model in using the Internet for TEFL. The advantages of the training model are that

1. The teacher-training model in using the Internet for teaching EFL can help a training organizer to set up a training course which is appropriate for EFL teachers.

2. With the created model, the trainees would learn not only the technological skills but also how to integrate technology into their authentic settings.

3. The trainees would understand that their own subject content is the most important part of using educational technology—not the technology itself.

5.3 The Teacher-training Model in Using the Internet for TEFL

According to the analyses mentioned in 5.2, the teacher-training model in using the Internet for TEFL was synthesized. In this part, eight key steps of the model are described in three parts: input, process, and output and feedback.

Part 1: Input

There are two key steps, context analyses and the model's design

Step 1: Context analyses

This includes four sub-steps: problem analysis, needs analysis, curriculum/learning standard analysis, and infrastructure analysis.

- Problem analysis

The problem analysis is the process of considering what problems exist currently. Course designers have to look honestly at the context to analyze problems.

- Needs analysis

This analysis answers questions about what knowledge or information is needed. It is important that the content of the training does not conflict or contradict job requirements. An experienced teacher can assist (as a subject matter expert) in determining the appropriate content.

- Learning standard analysis

Standards to define what should be taught and/or what students are expected to learn are the foundation for sweeping educational reforms within Thailand's education system, and standards-based educational reforms are a new and increasingly important development within the field of early care and education. Since learning standards were set up by the Ministry of Education to guide Thai school for their curriculum construction, it is very important for a training course designer to analyze learning standards. The purpose of the analysis was to determine how educational technology have been addressed within the standards documents and what particular skills, characteristics, and/or knowledge within this domain has been addressed.

- Infrastructure analysis

The infrastructure analysis is to investigate the availability of computers and Internet access. The information obtained from this analysis affects the selection of technology appropriate for real use.

Step 2: Model's design

This step consists of nine sub-steps: identifying training objectives, establishing trainee's characteristics, defining training content, launching a training pattern, selecting teaching methods, defining a training environment, defining training management, identifying an evaluation method, and defining follow-up management. Each secondary step is described below.

- Identifying training objectives

A training objective is the specific knowledge, skills, or attitudes that the trainees are to gain as a result of the training activity. An objective is usually measurable. This is a procedure for systematical training in which the specification of learning objectives plays a key role. The objectives indicate what a learner should be able to do after completing the training course.

- Establishing trainees' characteristics

This is the step which considers the trainees for whom a training course is being developed. It is essential early in planning to give attention to the abilities and experiences of the learners.

- Defining training content

There is a natural, close relationship between objectives and training content, each of which is dependent on each other. In other words, the objectives of the training can be derived from the training content, or the training content can be selected to match the objectives. Later in the design process the training content and task details become useful. Training content provides the substance of information for the topic. Later, training materials are selected according to the training content.

- Selecting a training pattern

This step considers the best way to organize a training course. The training course can be organized as a one-shot course or a sequential course. The training pattern should be selected based on the training content, the convenience of the trainees, and the availability of a training site.

- Selecting teaching methods

A teaching method is the process, technique or approach which a trainer uses in teaching. Teaching methods are selected based on the training objectives and the training content.

- Defining training environment

The training environment is another important step which affects the trainees' learning, especially technology training. Not only the place of training but also the availability of the technological infrastructure is crucial.

- Defining training management

This step is to define how to manage the training course, how the training will be organized, the numbers of trainers and training assistants, the responsibility of the trainers and the training assistants.

- Identifying evaluation methods

Evaluating a training program or training course means continuously assessing its progress and effectiveness. Evaluation improves the future planning and implementing of training. Evaluation helps determine the extent to which training objectives have been achieved. Evaluation gives insights for reviewing, adjusting, and revising goals, schedules, and procedures.

- Defining follow-up management

In order to make continuous development, follow-up support was initiated. This is to define the follow-up schedule, the tasks the trainer and the trainees must do or complete during and after the follow-up. The concrete plan or schedule of a follow-up management helps the training program or course successful.

Part 2: Process

In the process part, there are three key steps: the creation of the training package, the pilot of the training package, and the implementation of the training package. In each key step, there are sub-steps as follows:

Step 3: The creation of the training package

This consists of three sub-steps: planning the creation of the training package, preparing the creation of the training package, and creating the training package.

- Planning the creation of the training package in which topics, objectives, and learning activities are considered.

- Preparing the creation of the training package in which training materials, the staff for material creation, and the appropriate version of the software are prepared.

- Creating the training package in which the training materials are created, software or program is installed onto the school server, and the software manual for the trainees are prepared.

Step 4: The pilot of the training package

Before the training can be conducted, it must be piloted. The training package should be piloted with a group of people who have the same characteristics as the training targets. Training venue should have the availability of computers and the Internet. This step aims to check the correctness of all training components. It is, therefore, important to investigate the information during the training pilot in order to revise the training package before the real one.

Step 5: The implementation of the training package

This is the step of the implementation of the training package. In this step, the trainer should note that there are two kinds of knowledge.

- Experiential knowledge

The experiential knowledge means the information, views, and practices the trainees obtained from their previous experiences. This kind of knowledge plays a key role when people make a professional development. In this training, the trainees were encouraged to design their own online lessons based on their teaching experiences and current lesson plans.

- Obtained knowledge

This is knowledge the trainees obtained from the training which leads to their professional development. In the present study, this kind of knowledge was obtained through lectures, discussions, and hands-on practice.

In conclusion, the experiential knowledge and the obtained knowledge are combined to form “knowledge-in-action” (Wallace, 1991). This develops into the trainees’ continuous professional development.

Part 3: Output and feedback

Output and feedback is a crucial part which reflects the effectiveness of the model. Three key steps make up this part: (a) the output evaluation, (b) the model evaluation, and (c) the model revision.

Step 6: The output evaluation

The output evaluation is required when the training course expects the trainees' product. An output can be an online lesson, a traditional lesson with the integration of online materials or documents, a web site, and so on. The output evaluation could be conducted by the experts in the field, the

Step 7: The model's evaluation

Evaluation is the process of determining significance or worth, usually by careful appraisal and study. There are two sub-steps in the model's evaluation: the formative evaluation and the summative evaluation.

- The formative evaluation

Formative evaluation is a method of judging the worth of a program while the program activities are forming or happening. Formative evaluation focuses on the process.

- The summative evaluation

The summative evaluation takes place after the model implementation. Summative evaluation is a method of judging the worth of a program at the end of the program activities. The focus is on the outcome.

Step 8: The model's revision

The model is finally revised after the formative and summative evaluation. In the present study, the model was revised in steps of creating the training package.

Figure 5.1 Illustrates the teacher-training model in using the Internet for TEFL.

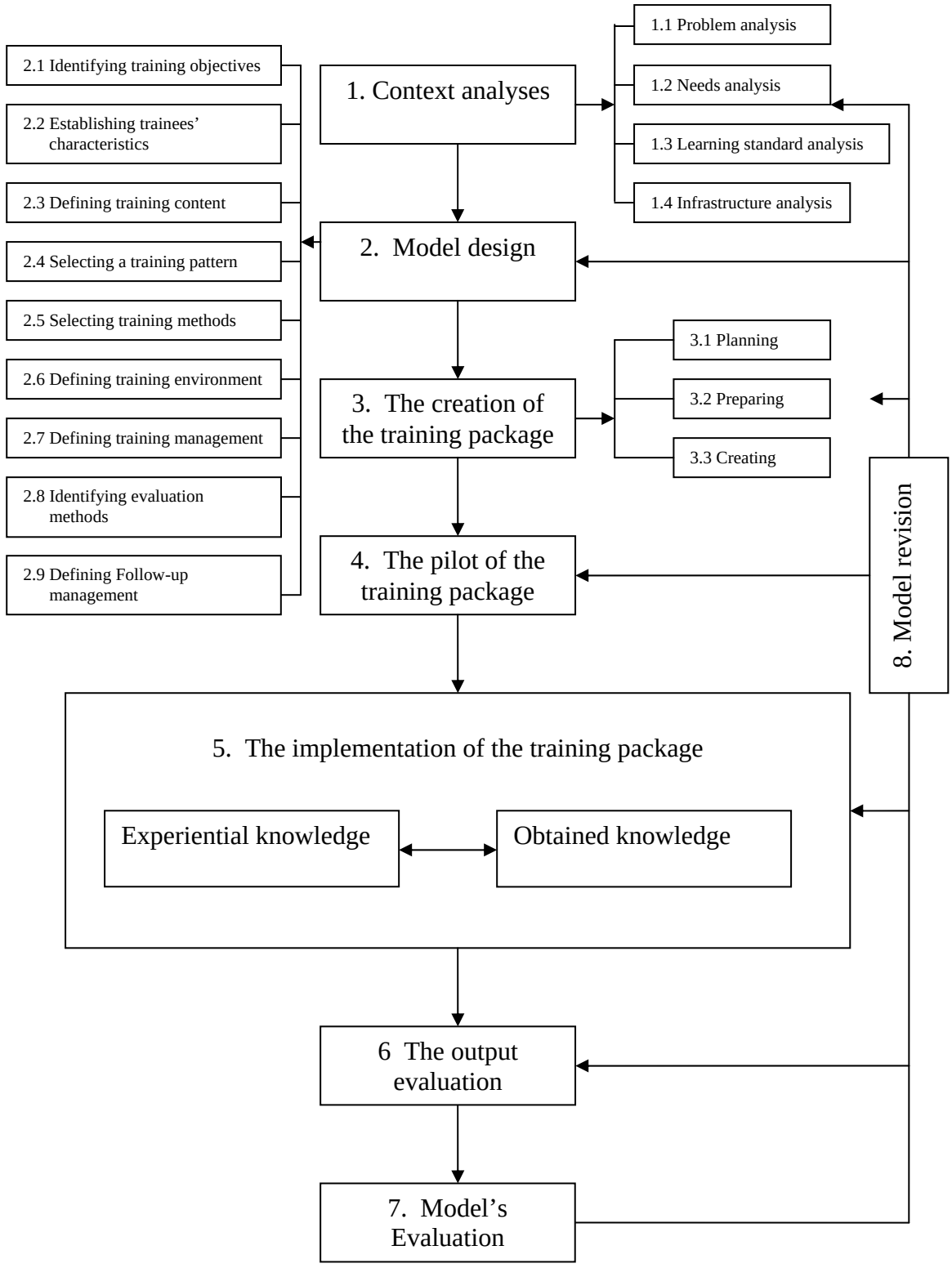


Figure 5.1 The Teacher-Training Model in Using the Internet for TEFL

5.4 Usability

In order to adopt this teacher-training model in using the Internet for TEFL, many considerations should be taken into account. The following were derived from the present study.

5.6.1 Training institutes

Training institutes can be a school, a university, and other educational institutes which aim to develop their online learning environment. The institutes should make a master plan which promotes a continuous development because a dynamic learning environment cannot be created in a short time. Concrete plans about budget and management are also required.

5.6.2 Availability of computers and Internet access

To conduct technological training, the availability of computers and Internet access is crucial. The quality of the computer and server is also important. Low-quality computers and low-speed Internet connections can be costly in terms of time, energy, and mentality. For example, when the connection is slow, the program users, the trainees, and their students alike get bored and finally give up using the program. Moreover, a low-quality server may not have enough memory for storing databases.

5.6.3 Trainers

Trainers must be knowledgeable in TEFL because they must give advice on creating language learning activities online. Moreover, the trainers must be familiar with Moodle as some technical problems might occur during and/or after the training.

The trainers, therefore, must be able to solve some other related problems such as the server breakdown, software errors, and so on.

5.6.4 Trainees

Trainees should have basic computer skills. Without the skills, they may not be able to operate Moodle because it requires higher skills. Moreover, the trainees must be willing to devote their time for continuous development of their lessons and keeping them dynamic at all time. That is, they need to update learning activities, encourage their students to use the lessons both inside and outside classrooms, and give feedback to their students consistently.

In conclusion, the chapter presented five parts of the model design: the introduction, the analysis of a teacher-training model and educational technology training in Thailand, the teacher-training model in using the Internet for TEFL, and its usability.

CHAPTER 6

SUMMARY, DISCUSSIONS, AND IMPLICATIONS

The present study attempted to design and develop the teacher-training model in using Internet applications for TEFL. This chapter presents the overview, summary of findings, discussions, and implications of the study.

6.1 Overview of the Study

This part is divided into

6.1.1 The purposes of the study

This study attempted to design, develop, implement, and evaluate a teacher-training model to enhance an instructor's use of the Internet in TEFL.

6.1.2 The research questions

To achieve the purposes of the study mentioned above, the following research questions were asked:

6.1.2.1 How do EFL secondary school teachers in Thailand use the Internet for their instruction currently?

6.1.2.2 What are elements in designing a teacher-training model in using the Internet for TEFL?

6.1.2.3 How do the EFL secondary school teacher trainees use the Internet before the training?

6.1.2.4 How do the EFL secondary school teacher trainees use the Internet after the training?

6.1.2.5 After the training, can the EFL secondary school teachers develop English lessons effectively via Moodle?

6.1.3 Population and sample

The population of the study is EFL secondary school teachers from 1,741 schools in Thailand. All of these schools join the School Net Thailand Project run by NECTEC. There are two groups of samples including (1) the sample for the pre-design stage and (2) the sample for the model-implementation stage. The sample for the pre-deign stage was 100 EFL secondary school teachers from large-scale schools in the provincial cities with at least one university. The sample for the model-implementation was 16 EFL teachers from Chalermkwanstree School in Phitsanulok.

6.1.4 The research instruments

The research instruments were used to answer the research questions. To answer each research question, one or more instruments were used. A pre-design questionnaire was used to answer Research Question 1. An evaluation form of the teacher-training model was used to answer Research Question 2. A pre-implementation questionnaire (only the first three parts of it) was used answer to Research Question 3. A post-implementation questionnaire (only the first three parts of it) was used to answer Research Question 4. A pre- and post- implementation (only the fourth part of it) and an evaluation form of the created lessons were used to answer Research Question 5.

6.1.5 Research Procedure

In order to develop a practical model to train secondary school EFL teachers in using the Internet applications for TEFL, these five stages were conducted.

Stage 1 Pre-Design Exploration

The first stage of this study is rooted in essential research steps of problem identification, literature review and problem definition. First, the researcher identified problems by conducting a pre-design survey to reveal the Internet use of secondary school EFL teachers in Thailand. The survey also investigated their needs, opinions, problems, and concerns of using Internet applications for TEFL. Second, the researcher explored related studies to obtain as much information as reachable to ascertain that all of factors or components necessary for a model design were considered. Third, the researcher analyzed the English learning standards set up by the Ministry of Education.

Stage 2 Model design and formative evaluation

This was a stage of systematic creation of initial intervention design based on the information gathered in the stage of pre-design exploration. The model was designed by integrating the idea of reflective teaching model and instructional design. Then, the model prototype was articulated. When the prototype was articulated, it allowed experts and EFL teachers who had been trained to use technology and had experienced in using technology for TEFL to evaluate the prototype. Next, the model prototype which was revised due to the formative evaluation was developed to a detailed design. After that, there was a pilot of the model at Naresuan University.

Stage 3 Model Implementation

In this stage, the detailed model developed in Stage 2 was implemented as a training course. The training course took place at Chalermkwanstree School, Phitsanulok. Sixteen trainees were English teachers at Chalermkwanstree School.

Stage 4 Follow-up

After the training, the trainees had about three months to use their created online lesson to teach their students while some of them were still developing more on their online lesson. During this time, the researcher as a trainer visited the school twice a week to follow up the created online lesson. The researcher met both the teachers who had finished creating their lessons and those who were still working on their lessons.

Stage 5 Revision

In this stage, the information gathered from the summative evaluation (from the post-implementation questionnaire, the follow-up interview, and the output evaluation) was used to revise the training model.

6.1.5 The data analysis

There are four major parts of the data analysis including the analysis of the pre-design stage, the analysis of the model evaluation, the analysis of the model implementation, and the analysis of the created lessons.

1. For the pre-design stage, a pre-design questionnaire was used. Data from the pre-design questionnaire were analyzed descriptive statistics, including mean, standard deviation, frequency and percentage. The data, including data from multiple choice items, rating scale items, and yes/no items, were coded and analyzed using the

SPSS software. The answers obtained from the open-ended questions were read, the keywords coded, and finally the frequencies of each category counted.

2. For the model evaluation, an evaluation form of a teacher-training model in using the Internet for TEFL was used. Data from the evaluation form of the model were analyzed descriptive statistics, including mean and standard deviation. The data from rating scale items were coded and analyzed using the SPSS software.

3. For the model implementation, a pre- and a post-implementation questionnaires were used. The data obtained were analyzed descriptive statistics, including mean, standard deviation, frequency and percentage. The data, including data from multiple choice items, rating scale items, and yes/no items, were coded and analyzed using the SPSS software. The answers obtained from the open-ended questions were read, the keywords coded, and finally the frequencies of each category counted.

4. For the output evaluation, an evaluation form of the created lessons, a trainee's self-evaluation, and the summary of the created lessons were used. Since the data from the evaluation form were qualitative, the evaluations were read and reported in writing. The trainees' self-evaluation which is the fourth part of the pre- and post-implementation questionnaire was analyzed by descriptive statistics. Moreover, a summary of the created lessons was presented.

6.2 Summary of Findings

According the data presented in Chapter 4, the research findings can be summarized as follows:

6.2.1 Findings from the Pre-Design Stage

From the data obtained from the pre-design stage, the following results were found.

1. 80% of the EFL teachers in Thailand used the Internet. They used it at home, at school, or at other places such as Internet cafés and public libraries.

2. The teachers could use computers with the Internet before, during, and after school. They could also use it on weekends.

3. In terms of academic use, the teachers occasionally used the Internet to (1) gather information for planning lessons, (2) create instructional materials, (3) access research and best practices for teaching, and (4) communicate with colleagues and other professionals accordingly.

4. The teachers had positive opinions in using the Internet for TEFL. They believed that the Internet (1) can play important instructional role in a classroom, (2) can be used in my classroom to enhance the teaching of important skills, (3) are best used for drill, remediation, or reinforcement of facts, (4) are best used in classroom to promote students' analytical, creative, and other 'higher order' thinking skills, (5) can be used in my classroom to provide alternative learning approaches for students who are having difficulty learning, (6) is an appropriate for some students, (7) can be used to make learning more interesting for all students, and (8) is unlikely to be disruptive to student learning and social development. Moreover, they also had good opinions in conducting their professional development in technology use in TEFL.

5. The teachers who used the Internet for their instruction felt that (1) they were curious to learn and explore more, (2) they were excited in huge useful information, (3) they were convenient with technology, and (4) they were interested in exploring and

perceiving a cyber world. However, some of them felt that they had insufficient knowledge to use the Internet and were exhausted because of spending too much time for searching.

6. The teachers thought that the most effective ways in using the Internet were (1) as a communication tool, (2) for self-learning, (3) as a supplementary tool, (4) as an authentic setting to practice English language skills, (5) for group researching, (6) as a source of updated news and information, (7) as a reference and (8) as a resource for critical thinking accordingly.

7. There are four kinds of concerns about using the Internet for TEFL: (1) administrative concern, (2) infrastructure concern, (3) professional concern, and (4) student-related concern. The administrative concern was insufficient maintenance budgets of schools for maintenance. The infrastructure concerns were a lack of computers and Internet access, connection problems including the speed and quality of the connection, the quality of computers, and a lack of technical support. The professional concerns were lack of teachers' knowledge in using the Internet for TEFL and teachers' workload. The student-related concern was about the individual interest of students which mainly focused on chatting or playing games only.

8. The teachers thought that it was very necessary to learn how to gathering information from ESL/EFL websites and create online activities whereas some other topics were also necessary but less than the two aforementioned topics.

9. Based on their workloads, the teachers were most likely to attend a one-shot intensive training course taking about five days during a semester break.

6.2.2 Finding from the design stage

From the model design stage, it was found that the teacher-training model in using the Internet applications in TEFL consists of eight key elements and sub-elements as follows:

Key element 1: Context analyses

Sub-element 1: Problem analysis

Sub-element 2: Needs analysis

Sub-element 3: Learning standard analysis

Sub-element 3: Infrastructure analysis

Key element 2: Model design

Sub-element 1: Identifying training objectives

Sub-element 2: Establishing trainees' characteristics

Sub-element 3: Defining training content

Sub-element 4: Selecting a training pattern

Sub-element 5: Selecting teaching methods

Sub-element 6: Defining training environment

Sub-element 7: Defining training management

Sub-element 8: Identifying evaluation methods

Sub-element 9: Defining follow-up management

Key element 3: The creation of the training package

Sub-element 1: Planning the creation of the training package

Sub-element 2: Preparing the creation of the training package

Sub-element 3: Creating the training package

Key element 4: The pilot of the training package

Key element 5: The implementation of the training package

Sub-element 1: Experiential knowledge

Sub-element 2: Obtained knowledge

Key element 6: The output evaluation

Key element 7: The model's evaluation

Sub-element 1: Formative evaluation

Sub-element 2: Summative evaluation

Key element 8: The model's revision

According to the elements mentioned above, the model was evaluated 'very appropriate' by the experts.

6.2.3 Findings from the pre- and post-implementation stage

From the data obtained in the pre- and post-implementation stage, the following results were found.

1. All of the trainees used the Internet at school both before and after the training. However, after the training, the trainees used the Internet at home and other places such as Internet cafés and the school library more than they had done before the training.

2. Before the training, the trainees occasionally used the Internet for only three educational purposes: to gather information for planning lessons, to communicate with colleagues or other professionals, and to create instructional materials. After the training, they used the Internet more for most of the educational purposes. In details, they frequently used the Internet to create instructional materials

and to gather information for planning lessons, and occasionally used it to post homework or other class requirements or project information, to communicate with student(s) outside the classroom, to communicate with colleagues or other professionals, to make presentations for the classroom, and to access model lesson plans.

3. In terms of opinions towards using the Internet for TEFL, the trainees had positive opinions both before and after the training. However, after the training they strongly agreed that the Internet can be used in their classrooms to make learning more interesting for all students.

4. Before the training, the trainees had five concerns divided into two kinds: professional concern and infrastructure concern. The highest two concerns were professional concern. They were teachers' workload and a lack of knowledge. The other three concerns were a lack of computers and the Internet, a lack of technical support, and a quality of computers. After the training, one of the highest concern—a lack of knowledge—was not found. However, they still had a professional concern about their workloads. Besides, they seemed to have more concerns about the infrastructure, the students' ability, and the school administration. Their infrastructure concerns were a lack of computers and the Internet, a quality of the Internet connection, the quality of computers. They were also concerned about their students' ability to use computers and their school administrators' expectations.

6.2.4 Findings from the follow-up stage

After following up for approximately sixteen weeks, it was found that the trainees could create EFL lessons via Moodle effectively based on the following results:

1. There were thirteen online lessons with at least three topics of the course content.

2. Based on the created lessons, the experts evaluated appropriate in three aspects: course display, content, and activities. However, suggestions from the experts were very beneficial for the trainees to improve their online lessons.

3. In terms of self-evaluation, they perceived that their skills in using the Internet for TEFL had been improved in every skills including (1) to search for information, (2) to evaluate websites, (3) to gather useful information, (4) to post teaching materials, (5) to post homework, (6) to upload a file, (7) to download a file, (8) to use a web board, (9) to use a chat room, (10) to communicate via e-mails, (11) to apply online information to teaching, and (12) to design online activities.

In conclusion, based on the findings mentioned above, it could be claimed that the model developed in the present study is practical and effective. Therefore, it can be used as a teacher-training model in using the Internet for TEFL.

6.3 The Discussions

According to the research findings, there are three focal discussion points as follows:

6.3.1 Reflective teaching model has advantages to teacher-training in technology use

According to the review of teacher education in technology use, there is a gap between a technology coursework and teachers' practice (Egbert, Paulus, and Nakamichi, 2002). Therefore, the reflective teaching model was adapted in the present

study in order to design and develop the teacher-training model in using the Internet applications in TEFL. In the present study, the reflective teaching model provided many advantages to the teachers. First, the trainees have opportunities to conduct ongoing exercise of intellect, responsibility, and professionalism. Since the training contains the follow-up stage with the continuous support from the trainer, the trainees have a long period of time to develop their online lessons. This supports Bailey (1997) that reflective teaching can be an intensely private means of conducting one's ongoing professional life. This is also one assumption of reflective teaching model noted by Richards and Lockhart (1995). Second, the trainees have opportunities to integrate their teaching experiences into the knowledge obtained from the training. The online lessons were created by the teachers themselves with the technical support from the trainer. This supports Florez (2001) that with the idea of reflective teaching, the teachers make the link between theory and practice. Third, the training provides enough time for reflection, implementation, and follow-up. With the idea of reflective teaching model, the training course is practical for the trainer to manage the training and for the trainees to develop their lessons. Such an advantage was also found in Posteguillo and Palmer (2000). From the discussion, it is remarkable that the reflective teaching model is well applicable to teacher-training in technology use.

However, the training course with longer time can bring about the outstanding change of the trainees' practice as mentioned by Grau (1996). Grau notes that it takes a minimum of 3 years to cause considerable change in teacher practice and that a one-shot course is not effective in doing this.

6.3.2 The teachers' needs of technology training are from internal and external factors

From the context analyses, it is found that there are internal and external factors influencing the teachers' needs of technology training. The external factors are the learning standards set up by the Ministry of Education and the encouragement from the school administrative. The internal factor is teachers' needs of professional development. In the pre-design and the pre-implementation study, the teachers demonstrated their needs to attend technology training. This relates to the previous study mentioning that the teachers need to learn what they actually need to use (Egbert, Paulus, and Nakamichi, 2002).

6.3.3 The teachers' opinions towards using technology improve through the training.

In the present study, there is an improvement of teachers' opinions towards using the Internet applications for TEFL. The pre-implementation study shows that the trainees have positive opinions about using the Internet for their instruction. They agree with seven statements and they strongly agreed with one statement. In the post-implementation study, the trainees have more positive opinions about using the Internet for their instruction. They agree with seven statements and they strongly agreed with two statement. Such an improvement support Lam (2000) mentioning that teachers' opinions towards computers improve through a coursework.

6.4 The Implications of the Study

According to the conclusions and discussions, there are some implications for future research and any institutes which would adapt/adopt the teacher-training model of using the Internet applications for TEFL.

6.4.1 Implications for future research

The present study designed the teacher-training model for secondary schools. The training model was designed based on the information of secondary school and that of secondary school teachers. It is, therefore, a potential for future research to study the information of primary schools or even universities in order to design an appropriate teacher-training model for different groups of trainees.

The implementation of the teacher-training model is another challenge for future research. The present study conducted the model implementation with only one school. Therefore, the model should be adopted with some other secondary schools which have sufficient technological infrastructure. The future implementation can bring about some interesting information for model revisions.

Since there was no class observation in the present study, the future research with data from class observations will provide crucial information to ascertain the model application. Moreover, some feedback from students will be beneficial for teachers who have made online lessons in order to develop their lessons. Some other kinds of data collection can be also conducted to obtain rich information for model revisions.

6.4.2 Implications for institutes

Any institutes which would like to adopt or adapt this teacher-training model should be aware that the model contains eight essential elements. The institutes which create their teacher-training course according to this model should focus on those eight elements. However, they could modify some parts of the process due to their context. One of the most important issues the institutes should consider is that the model encourages the EFL teacher-training. It is debatable to organize a training course for teachers of different subject areas. Since the peer collaboration during the training course is one component of reflective teaching model, teachers from the same subject area, which is EFL, is more practical. Some other information for any institutes which would adopt/adapt this model is in the usability of the model in Chapter 5.

In conclusion, the chapter concludes the purposes of the study, the research methodology, the research procedure, the data analysis, and the research findings. In addition, it presents the discussions of the study and the implications of future research and institutes.

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APPENDIX A

The Pre-design Questionnaire

EFL Teachers' Use of the Internet for TEFL

Question 1: Where do you have access to the Internet?

□ At home

□ At school

□ Other (please specify…….)

□ Nowhere (please skip to Question 8)

Question 2: How many computers are there in your school for students? For teachers?

For students: …… computers

For teachers: …… computers

Question 3: When are computers with Internet access at school available to teachers and students?

	For teachers		For students	
	Yes	No	Yes	No
a. before school				
b. during school				
c. after school				
d. on weekends				

Question 4: Please indicate how often you use the Internet at school or at home to accomplish each objective listed below.

Occasionally = 1-5 times a week Frequently = more than 5 times a week

Goals of using the Internet	**At school**			**At home**		
	Never	**Occasionally**	**Frequently**	**Never**	**Occasionally**	**Frequently**
a. create instructional materials (i.e. handouts, test, etc.)						
b. gather information for planning lessons						
c. access model lesson plans						
d. access research and best practices for teaching						
e. make presentations for the classroom						
f. communicate with colleagues/other professionals						
g. communicate with student(s) outside the classroom/ classroom hours						
h. post homework or other class requirements or project information						

Goals of using the Internet	At school			At home		
	Never	Occasionally	Frequently	Never	Occasionally	Frequently
i. other (please specify goals that you use the Internet for) …… …… …… …… ……						

Question 5: Please check the response that best indicates your level of agreement with each of the following statements:

	Strongly Agree	Agree	Disagree	Strongly Disagree
a. Internet applications can play an important instructional role in my classroom.				
b. Using Internet applications in my classroom is likely to be disruptive to student learning and social development.				

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
c. Internet applications can be used in my classroom to enhance the teaching of important skills.				
d. Internet applications are best used for drill, remediation, or reinforcement of facts.				
e. Internet applications are best used in classroom to promote students' analytical, creative, and other "higher order" thinking skills.				
f. Internet applications can be used in my classroom to provide alternative learning approaches for students who are having difficulty learning.				
g. Using Internet applications is an appropriate activity for some students.				
h. Internet applications can be used in my classroom to make learning more interesting for all students.				

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
i. I would like to learn as much as possible about how to use new computers and Internet applications to improve instruction in my classroom.				

Question 6: What other comments do you have about using the Internet in your teaching?

……

……

……

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……

Question 7: How do you feel when you use the Internet for your teaching preparation and classroom teaching?

7 a: For teaching preparation

☐ I don't use the Internet for my teaching preparation

☐ When I use the Internet for my teaching preparation, I feel

……

……

……

7 b: For classroom teaching

☐ I don't use the Internet for my classroom teaching

☐ When I use the Internet for my classroom teaching, I feel

……

……

……

Question 8: What do you think are the most effective ways to use the Internet in EFL teaching?

……

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Question 9: What are your concerns about using the Internet for TEFL?

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Question 10: What do you need to learn in order to use the Internet well for your teaching and teaching preparation?

…….

…….

…….

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…….

Question 11: According to your workload, when are you most likely to attend a training course?

☐ On weekends during the semester

☐ 2-3 hours after school during the semester

☐ 5 days for a one-shot intensive course during a semester break

☐ Others (Please specify……..)

Question 12: According to your instructional needs, what should be in the content of a training course for you?

VN = Very necessary N = Necessary NN = Not necessary

Content of the training course	**VN**	**N**	**NN**
1. Basic computer skills (how to use a computer in general such as turning on and off, open and run any basic computer applications)			

Content of the training course	VN	N	NN
2. Basic skills of using Internet applications 2.1 E-mail			
2.2 World Wide Web			
2.3 Webboard			
2.4 Chatroom			
3. Website creation			
4. Website evaluation			
5. How to integrate Internet applications with TEFL 5.1 Gathering information from ESL/EFL websites			
5.2 Creating lesson plans			
5.3 Creating activities			
5.4 Creating materials			
6. Others 6.1 ……. 6.2 ……. 6.3 …….			

APPENDIX B

Evaluation Form of the Prototype Model

Please indicate the level of the appropriateness of the prototype model (enclosed).

5 = ‘most appropriate’

4 = ‘very appropriate’

3 = ‘appropriate’

2 = ‘somewhat appropriate’

1 = ‘inappropriate’

The appropriateness of the model	**5**	**4**	**3**	**2**	**1**
The elements of the Input part 1. The context analyses and its sub-elements					
2. The model design and its sub-elements					
The elements of the Process part 3. The creation of the training package					
4. The pilot of the training package					
5. The implementation of the training package and its sub-elements					
The elements of the Output part 6. The model evaluation and its sub-elements					

The appropriateness of the model	**5**	**4**	**3**	**2**	**1**
7. The model revision					
8. The steps of the elements					
9. The directions and the relationship of the model elements					
10. The prototype model					

Please give comments on the prototype model

_____

_____

_____

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APPENDIX C

The Pre-implementation Questionnaire

The EFL teachers' use of the Internet for TEFL

Question 1: Where do you have access to the Internet?

□ At home

□ At school

□ Other (please specify…….)

□ Nowhere (please skip to Question 8)

Question 2: Please indicate how often you use the Internet at school or at home to accomplish each objective listed below.

Occasionally = 1-5 times a week Frequently = more than 5 times a week

Goals of using the Internet	**At school**			**At home**		
	Never	**Occasionally**	**Frequently**	**Never**	**Occasionally**	**Frequently**
a. create instructional materials (i.e. handouts, test, etc.)						
b. gather information for planning lessons						

Goals of using the Internet	At school			At home		
	Never	**Occasionally**	**Frequently**	**Never**	**Occasionally**	**Frequently**
c. access model lesson plans						
d. access research and best practices for teaching						
e. make presentations for the classroom						
f. communicate with colleagues/other professionals						
g. communicate with student(s) outside the classroom/ classroom hours						
h. post homework or other class requirements or project information						
i. other (please specify goals that you use the Internet for) …… …… …… …… ……						

Question 3: Please check the response that best indicates your level of agreement with each of the following statements:

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
a. Internet applications can play an important instructional role in my classroom.				
b. Using Internet applications in my classroom is likely to be disruptive to student learning and social development.				
c. Internet applications can be used in my classroom to enhance the teaching of important skills.				
d. Internet applications are best used for drill, remediation, or reinforcement of facts.				
e. Internet applications are best used in classroom to promote students' analytical, creative, and other "higher order" thinking skills.				
f. Internet applications can be used in my classroom to provide alternative learning approaches for students who are having difficulty learning.				

	Strongly Agree	Agree	Disagree	Strongly Disagree
g. Using Internet applications is an appropriate activity for some students.				
h. Internet applications can be used in my classroom to make learning more interesting for all students.				
i. I would like to learn as much as possible about how to use new computers and Internet applications to improve instruction in my classroom.				

Question 4: What are your concerns about using the Internet for TEFL?

…….

…….

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…….

Self-Evaluation

Question 5: To what extent are you skillful in these following tasks?

Tasks	Highly skillful	Very skillful	skillful	Somewhat skillful	unskillful
1. To search for information					
2. To evaluate websites					
3. To gather useful information					
4. To post teaching materials					
5. To post homework					
6. To upload a file					
7. To download a file					
8. To use a web board					
9. To use a chat room					
10. To communicate via e-mails					
11. To apply online information to teaching					
12. To design online activities					

APPENDIX D

The Post-implementation Questionnaire

The EFL teachers' use of the Internet for TEFL

Question 1: Where do you have access to the Internet?

□ At home

□ At school

□ Other (please specify…….)

□ Nowhere (please skip to Question 8)

Question 2: Please indicate how often you use the Internet at school or at home to accomplish each objective listed below.

Occasionally = 1-5 times a week Frequently = more than 5 times a week

Goals of using the Internet	**At school**			**At home**		
	Never	**Occasionally**	**Frequently**	**Never**	**Occasionally**	**Frequently**
a. create instructional materials (i.e. handouts, test, etc.)						
b. gather information for planning lessons						

Goals of using the Internet	At school			At home		
	Never	Occasionally	Frequently	Never	Occasionally	Frequently
c. access model lesson plans						
d. access research and best practices for teaching						
e. make presentations for the classroom						
f. communicate with colleagues/other professionals						
g. communicate with student(s) outside the classroom/ classroom hours						
h. post homework or other class requirements or project information						
i. other (please specify goals that you use the Internet for) …… …… …… …… ……						

Question 3: Please check the response that best indicates your level of agreement with each of the following statements:

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
a. Internet applications can play an important instructional role in my classroom.				
b. Using Internet applications in my classroom is likely to be disruptive to student learning and social development.				
c. Internet applications can be used in my classroom to enhance the teaching of important skills.				
d. Internet applications are best used for drill, remediation, or reinforcement of facts.				
e. Internet applications are best used in classroom to promote students' analytical, creative, and other "higher order" thinking skills.				
f. Internet applications can be used in my classroom to provide alternative learning approaches for students who are having difficulty learning.				

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
g. Using Internet applications is an appropriate activity for some students.				
h. Internet applications can be used in my classroom to make learning more interesting for all students.				
i. I would like to learn as much as possible about how to use new computers and Internet applications to improve instruction in my classroom.				

Question 4: What are your concerns about using the Internet for TEFL?

…….

…….

…….

…….

…….

Self-Evaluation

Question 5: To what extent are you skillful in these following tasks?

Tasks	Highly skillful	Very skillful	skillful	Somewhat skillful	unskillful
1. To search for information					
2. To evaluate websites					
3. To gather useful information					
4. To post teaching materials					
5. To post homework					
6. To upload a file					
7. To download a file					
8. To use a web board					
9. To use a chat room					
10. To communicate via e-mails					
11. To apply online information to teaching					
12. To design online activities					

APPENDIX E

Evaluation Form of the Created Lessons

Course:_____

Number of topics:_____

Number of activities:_____

The appropriateness of course display

_____

_____

The appropriateness of content

_____

_____

The appropriateness of activities

_____

_____

Suggestions

_____

_____

CURRICULUM VITAE

Sudsuang Yutdhana was born in Songkhla. She obtained her B.A. (Hon.) in Business English from Yonok College in 1995, M.A. in English from Naresuan University in 2000, M.A. in Literacy Education from Washington State University, Pullman, Washington, in 2005. Her research interest is computer-assisted language learning (CALL). After graduation, she will join the Department of Western Languages, Faculty of Humanities, Naresuan University, Phitsanulok.