CHAPTER II

LITERATURE REVIEW

This chapter deals with a large body of related literature on information and communication technology, information and communication technology for education, information and communication technology for English language teaching, professional development, types of training; teacher needs assessment, learning theory, situated learning, curriculum development, instructional design, and project-based learning. The discussions will be made at the end of every section to provide the reasons for adopting these literatures.

Information and Communication Technology

Information and Communications Technology - or technologies (ICT) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICTs are often spoken of in a particular context, such as ICTs in education, health care, or libraries. The term is somewhat more common outside of the United States (SearchCIO-Midmarket.com, 2009). The Kent ICT (2009) defined ICT as the computing and communications facilities and features that variously support teaching, learning and a range of activities in education. Moreover, they also provided some ICT related activities, they are the use of broadcast material or CD-ROM as sources of information in history, micro-computers with appropriate keyboards and other devices to teach literacy and writing, , keyboards, effects and sequencers in music teaching, devices to facilitate communication for pupils with special needs, electronic toys to develop spatial awareness and psycho-motor control, email to support collaborative writing and sharing of resources, video-conferencing to support the teaching of modern foreign languages, internet-based research to support geographical enquiry, integrated learning

systems (ILS) to teach basic numeracy, and communications technology to exchange administrative and assessment data.

According the mentioned information about the ICT above, ICT could be selected as a potential resource of tools to support and enhance the quality of education. The next topic will focus on the ICT for education.

1. Information and Communication Technology for Education

Some educators viewed and suggested ICT as a powerful tool for education. The ICT could facilitate learning and assist improving performance by creating, using and managing appropriate technological processes and resources (Richey, 2008). The term educational technology is often associated with, and encompasses, instructional theory and learning theory. While instructional technology covers the processes and systems of learning and instruction, educational technology includes other systems used in the process of developing human capability. Educational Technology includes, but is not limited to, software, hardware, as well as Internet applications and activities.

UNESCO Bangkok (2008) conducted some projects supporting the information and communication technologies in education dealing with the use of Information and Communication Technologies (ICTs) within educational technology. The purpose of ICT in education is generally making learning more efficient and effective. ICT also enables learning through multiple intelligences as ICT has introduced learning through simulation games; this enables active learning through all senses. The World Bank's education lending portfolio includes projects with the following ICT components: Education Technology - (a) supplying computers and connectivity, (b) building school computer labs, (c) enabling instruction in computer programming and computer literacy, (d) developing and disseminating new curricula in electronic format, and (e) using ICT as tools for presentation for learning to promote and develop skills related to critical thinking, information evaluation and reasoning, collaboration and intentional awareness. Moreover, it also referred to Distance Learning - Planned learning that normally occurs in a different place from teaching and as a result requires special techniques of course design, instructional techniques, methods of communication, and organizational and administrative arrangements. And Educational Management and Information Systems - aimed at

increasing efficiency and effectiveness of administration of educational programs through improved information and planning systems.

National School Boards Association (NSBA) (2009) claimed some advantages of ICT in education that it was easy-to-access course materials. Instructors can post the course material or important information on a course website, which means students can study at any time and location they prefer and can obtain the study materials very quickly. Moreover, it improved student writing. It is convenient for students to edit their written work on word processors, which in turn improves the quality of their writing. According to some studies, the students are better at critiquing and editing written work that is exchanged over a computer network with students they know. Moreover, computer-based instruction can give instant feedback to students and explain correct answers. Furthermore, computer is patient and non-judgmental, which can give the student motivation to continue learning. According to Kulik (2001), who studies effectiveness of computers used for instruction, computer could help students to be able to learn more in less time when receiving computer-based instruction and they like classes more and develop more positive attitudes toward computers in computer-based classes.

According to the mentioned information above, there were many educators provided some information confirming the quality of teaching with technology, The benefits of the integration of ICT into education were also reported by language teaching filed educators. This is discussed in the next section.

2. Information and Communication Technology for English Language Teaching

The integration of ICT into English language teaching were suggested and reported by many educators reflecting its benefit and advantages in various way. ICT supports the modern principles of learning and language acquisition. Individualisation, interaction and sudent motivation, are often considered in modern education theories, The advantages of ICT for education in terms of ICT online and interactive applications could also be described as it could; 1) provide interest and motivation, 2) supports different learning styles, 3) optimal use of learning time, 4) immediate feedback (interactive exercises), and 5)increase access for all learners. ICT becomes as a necessarily part of the powerful tools in teaching.

The integrating of ICT or CMC (Computer-Mediated Commnication) for language teaching has been used since the sixties and the seventies. Language laboratories were installed for a large number of educational institutes and the traditional language laboratory was comprised of a series of booths, each providing a cassette deck, and accompanying microphone and headphone (Suppasetseree, 2005). Then, in mid 1990s, computers began playing the role as a part of teaching materials. Microcomputers and quality CALL software provided yet another medium for language learning. Chamber and Davies (2001) stated that, in Europe, multilingualism and language diversity are considered as priorities, not only in the economic sphere as a means of ensuring the mobility of workers, but also in the political context of European integration. As a result, the European Commission has given collaborative language projects significant attention, particularly those dealing with Information and Communication Technologies and education. Little and Littlemore (2001) suggested tandem learning, a type of language exchange via e-mail or chat rooms, as one way to deal with this issue, and discussed how such exercises could be set up for effective language learning. They stated that the programs that have been most successful for learner through the use of technology. The clear understanding of the need for strategy training is needed to help students becoming aware of their own learning. It helped students to develop the skills and tools to self-evaluate and thus, improve the learning process.

Bertin (2001) conducted a survey investigating the relationship between learners' linguistic success and their expectations regarding autonomy using multimedia language learning material. Bertin encouraged language teachers to take advantage of new technology to "diversify the pedagogic structure of the materials they use or design and to match their learners' needs and levels of competence as closely as possible." He argued that recent multimedia language learning materials make it easier for teachers to develop a more flexible learner-centered curriculum that allows for customization to different learner types and learning styles.

Vogel (2001) conducted a study of using World Wide Web in foreign language presented learning and teaching. He questioned 55 students at his university to determine the result if they consciously use the Web for language learning. His results showed that none of the students specifically surfed the Web in order to learn

foreign languages; rather they were generally in search of information of some sort. However, they did appear to have some feeling that their regular Web surfing activities might be helping their foreign language skills, as they needed to read and understand the foreign language information. He concluded that there are many features of the Web that function like a naturalistic language environment. Web could be used as a powerful tools to used in classroom with the teachers' supervision.

Rézeau (2001) discussed the use of computer-based concordances in the classroom and presented various concordance-based exercises he used to help his French-speaking students employ more inductive strategies when studying English grammar. He noted that although these exercises were extremely useful, there were limitations for using concordances, as not all genres of texts are appropriate. Nonetheless, he concluded that, "once you have started relying on the evidence of the data for checking the 'rules' found in grammar books as well as your own 'intuitions' about language, concordances tend to become an indispensable tool".

Buckett and Stringer (2001) conducted a research study as part of a project investigating videoconferencing and language teaching. The main goal of the project was to demonstrate the use of multimedia conferencing to share language teaching resources and to increase language learners' access to resources and classes not available in their communities or schools. Although their results were favorable overall, and they demonstrated the feasibility of teaching foreign languages over a network, there were some problems, such as the audio and video quality. However, the authors note that this technology is improving, and they are hopeful that remaining issues will be resolved soon.

Oliver (2003) suggested the advantages of ICT for English language teacher ausing the presentation of the aphabet "C" in ICT. He stated that the "C" in ICT can help the English language teachers to remember a number of key points to bear in mind when using computers in English classrooms. He stated some C as some key points include 1) Catalysts, computers are often a catalyst for pupil activity. The allowance of children to work with computers offers an almost continual series of minor (and sometimes major) problems that have to be solved – in many cases, before the user can continue. Computer can encourage children to interact to it to learn. 2) Collaboration or co-operation, computer screen allows pupils to do things together.

With the appropriate training for the children before the class, two or three (or even a whole class, if the screen is big enough) can participate in the same activity, such as solving a problem, finding answers to a question, writing a story and so on. 3) Creativity, computers can also encourage creativity. Sound, pictures, animations, video and text can be put together in new and different ways to make stories more convincing and explanations clearer than they would have been without this multi-media tool. 4) Complementary function, computers can work best as tools for learning and teaching when they complement other teaching and learning activity. Some software could be used as the teaching materials such as flashcards for oral activities, materials for wall charts and classroom displays, electronic dictionaries can be consulted when needed for writing - or to help pupils to understand a text. 5) Control, most uses of ICT might or might not lend themselves to this kind of teacher control. Computer allows pupils to learn some basic ways of obtaining information themselves, once pupils could do it, they can find out many things for themselves that the teacher may not know much or anything about. Successful use of ICT might be suggested that it is inconsistent with complete teacher control of what happens in the language classroom. However, that does not mean that teachers should not guide learners or set them tasks leading to specified solutions, set time limits and so on. 6) Competence, computer enhances pupils' competences to do various activities. Teachers should be able to explain to their pupils what they want them to do, to comment on what they are doing or have done and they should be able to do this in English. Whenever computers are used in English teaching, there are golden opportunities for teachers to communicate informally and purposefully with their pupils. 7) Communication, the primary purpose of ICT in foreign language teaching should be to stimulate real communication between pupils (for example, within a class), communication between teachers and their pupils, for example, asking for help, learning assisting, personal consulting, groups discussion, and debate. It has an obvious role in furthering communication between learners from different countries who are (after all) learning English as a vehicle for international contact and understanding.

Cooper (2009) also suggested the advantageousness of ICT in English that can enhance teaching and learning by enabling pupils to plan, draft, revise and edit their own writing using a word processor and other desktop publishing packages,

easily locate and read significant parts of the text by using search strategies, locate information quickly, confidently and accurately, publish writing in a variety of forms , have access to a wider number of texts online e.g. newspapers, communicate with a wider group of people e.g. via e-mail, newsgroups, online conferencing, and integrate different media into one text. He also stated that it enhanced pupils to use a wider range of texts to compare the way information is presented, identify the features of particular text types, discuss the merits and limitations of particular text types, and investigate how reading strategies are adapted to suit different texts.

Acoording to all the advantages mentioned and the reports provided by language teaching educator, it shows that the adoption of ICT into language teaching can cause some positive effective and advantageous results to promote language teaching and learning in various ways. However, some language teachers could not find way to integrate ICT into their teaching effectively and they needed some professional developments (Drenoyanni and Selwood, 1998; Higgins and Moseley, 2001; Hokanson and Hooper, 2000; Niederhauser and Stoddart, 2001). In order to integrate ICT into language teaching appropriately and effectively, the well-prepared and appropriate professional development for English language teachers are needed. This will be discussed in the next section.

Professional Development

Professional development or teacher training refers to skills and knowledge attained for both personal development and career advancement. Professional development encompasses all types of facilitated learning opportunities, ranging from college degrees to formal coursework, conferences and informal learning opportunities situated in practice. It has been described as intensive and collaborative, ideally incorporating an evaluative stage (Speck and Knipe, 2005) Professional development includes formal experiences (such as attending workshops and professional meetings, mentoring, etc.) and informal experiences (such as reading professional publications, watching television documentaries related to an academic discipline, etc.) (Ganser, 2000). There are a variety of approaches to professional development, including consultation, coaching, communities of practice, lesson study, mentoring, reflective

supervision and technical assistance (National Professional Development Center on Inclusion, 2008).

A wide variety of people, such as teachers, health care professionals, lawyers, accountants and engineers engage in professional development. Individuals may participate in professional development because of an interest in lifelong learning, a sense of moral obligation, to maintain and improve professional competence, enhance career progression, keep abreast of new technology and practice, or to comply with professional regulatory organizations (Golding and Gray 2006; Jasper, 2006; The Association of Professional Engineers, Geologists and Geophysicists of Alberta, 2009).

Training comes in different media formats—including videotapes; online, course-based, distance learning; and various combinations of media. Among the benefits of such professional development are access to content-area teachers located all over the country and the potential for greater comfort levels for sharing ideas and thoughts electronically rather than face-to-face. Common experiences and interests provide a possible networked community, as well as the opportunity for ongoing interactions and sharing between members long after the course or training has been completed (Koufman-Frederick, Lillie, Pattison-Gordon, Watt, and Carter, 1999; Serim, 1995). The impact of the professional development will be discussed in the next section to support the advantages of ICT in teaching.

1. The Impact of Professional Development for Teachers to integrate ICT into their teaching

For many years, researchers have searched for factors affecting the use of computers in the classroom. Many studies stated the negative factor obstructing the integration of ICT into teaching is the lack of knowledge how to integrate ICT into teaching appropriately. In order to solve the mentioned problem, some educational institutes conducted professional development for their teachers. The results showed the positive improvements among the teachers and they kept trying to integrate ICT into their teaching more appropriately.

Foell (1998) stated that teachers' attitudes towards the integration of ICT into teaching became more positive after they were trained. Many surveys found the improvement of teachers' positive attitudes towards the integration of technology into

teaching after they had professional development. A study was done to determine how to effectively integrate technology into teaching, with an emphasis on teachers' attitudes. The study concluded that the teachers who were exposed to the training had more positive attitudes towards the integration of technology into teaching (Christensen, 1998; Gilemore,1998).

In Thailand, the National Education Act 1999 states in Category 9 (technology for education) at Section 65 that the government supports teachers to become ICT developers and users who integrate ICT knowledge and skills into their teaching appropriately. Therefore, the Ministry of Education has conducted a lot of ICT training as professional development for Thai teachers in primary and secondary schools. In addition, it provides a large number of computers to schools so that teachers can integrate ICT into their teachings. The number of teachers integrating ICT in their teaching is increasing, and more ICT trainings are planned to be conducted for their teachers (Malaiwong, 2001, Keawdaeng, 2001). However, at present, there has neither been a study related to the professional development of English teachers vocational institutes and higher education to integrate ICT into their teaching.

RMUTI aimed at providing more chance for students to explore their knowledge through ICT. Thus, the Learning Management System (LMS) has been developed and allowed teachers and students to access the LMS as fundamental resources for additional knowledge. RMUTI also keeps adding some courseware to support learning, supporting teaching material creating, providing the teachers with some advice on creating e-learning lessons, developing and providing LMS (Learning Management System), and cooperating with other organization about e-learning. Hence, RMUTI provides some more ICT facilities in all five campuses to support the effective learning. However, the teachers' efficiencies to integrate ICT into their teaching are rather limited, and there are a large number of teachers who need some training. Moreover, the five campuses are exactly far away from each other and the entire teachers could not attend the face-to-face training conducted for a month length. This factor does obstruct the integration of ICT into teaching. Though the RMUTI had tried some training to create some online lessons and teaching material, most teachers were still unable to conduct the online course appropriately, since the trainings

provided were not practical and did not meet the trainees' needs. Therefore, to obtain more information on how to conduct an appropriate and practical professional development session that meets the trainees' needs, the professional development for English language teachers is needed to be developed. In order to be able to conduct the professional development which is appropriate and practical to the teachers, the impact of the professional development for English language teachers are needed to be reviewed and discussed in the next section.

2. Professional development for English Language Teachers

Nowadays, some educators believed that teacher quality is one of the key elements which determine the success of educational reformation. However, the present English teaching reformation has laid much emphasis on teaching materials, teaching methods, and learning process, hardly paying enough attention to how exactly teachers should perform their functions in teaching and improve their teaching effectively. Hampera and Stickler (2010) stated that the technical skills that are needed to teach in an online environment are not widely trained for the English teachers. They suggested training program with a pyramid of skills necessary for successful online teaching. These include the more general skills of dealing with the technology and using its advantages, the social skills of community building, language teaching skills, and the skills to teach creatively and develop a personal teaching style in an online medium. The training programme includes both pre-course training and ongoing staff development.

Some educators provided some professional development to integrate ICT into teaching English and the positive results were reported appreciatively. Laborda and Royoa (2009) conducted a professional development for senior English teachers in Spain to integrate ICT into their teaching. Instructional methods principally included a training in ICT strategy and use 1) face-to-face instruction and 2) ICT teaching materials, they are autonomous learning, group work, synchronous and asynchronous communication, and computer based test design. The teachers' responses to long discussions in a control session and to a questionnaire, along with the observations of a 20-hour course, and the results of the familiarization with different tools show that, for this type of training, it is not only necessary to familiarize teachers with the testing

tool but also with the process of creating online tests and with the testing process itself (Chapelle and Douglas, 2006; Stoynoff and Chapelle, 2005).

Many researchers have confirmed the positive contribution of computers and internet as a flexible language learning tool which leads itself to a variety of uses in realistic contexts (Maduekwe, 2006). She reported the findings from a case study on "ICT and Language Teacher Training in Nigeria." Using two Nigerian Universities where the students were taking the computer course FSC 103, the study was to determine the attainment of ICT competencies of initial language teacher trainees, after completion of the course. The findings revealed that the provision of training in ICT competencies of the initial language teacher trainees in the computer course in the two Nigerian universities is largely inadequate. The findings also reveal that the language teacher trainees who completed the computer course have very limited opportunities for developing their IT skills. This is because the institute themselves have insufficient support in terms of resources, tutorial, supervision, access, and use. The study also reported that the teacher trainees were motivated by sheer desire for knowledge and the acquisition of more ICT skills after their exposure to the computer course.

In order to conduct the professional development appropriately, some suggestions for appropriate professional development are needed to be considered for the appropriate and practical curriculum. The next section will present the suggestions for appropriate professional development.

3. Suggestions for appropriate professional development

According to the professional development reported, some suggestions for appropriate professional developments have been made by many educators, namely (Senge, 1999; Renyi, 1998; McLaughlin, 1991; Joyce and Showers, 1995; Hawley and Valli, 1999; Fullan, 1982; Fullan and Stiegelbauer, 1991). Their suggestions are as follows:

3.1 Learning should be made in an active rather than a passive context. It should enhance capacity for effective action and generates knowledge that last.

3.2 Professional development should be a transformation from a single program or activity to an ethos which is ideally a school culture where learning is becoming a part of activities throughout teachers' working lives.

3.3 Professional development activities should reflect teacher needs and their needs should be incorporated into the details of the plan.

3.4 Professional development should not be made as remediation or presentations but provide practice opportunities in simulated and actual settings, and allow structured and open-ended feedback about performance.

3.5 Professional development is most influential when ongoing support of the sessions involves collaboration, testing of selected ideas, reflective practice, and peer observation.

3.6 Realistic demonstrations with hard-to-teach students should be included to provide a concrete example of how the innovation is to be carried out while creating the basis for further discussion.

3.7 Staff support activities are necessary to sustain the gains of how-to-do-it training.

3.8 There should be crucial follow-up support system in place to ensure learning connected to practice.

3.9 The purpose should be clear to avoid feeling forced and unnecessary.

Therefore, to be able to accommodate the teachers needs to ensure the appropripate professional development, the curriculum development process will consider those suggestions precisely. However, some problems found in professional development should be considered to make sure the developed curriculum appropriately. This will be discussed in the next section.

4. Problems found in professional development.

There are many factors that could obstruct the integration of ICT into teaching as well as the professional development. These are age, teaching experiences, teaching levels, level of education, gender, time constraints, priority in job requirement, self-discipline, workload, and self-confidence (Pongsart, 2005; Kongsanay, Sittidamrong, Burasirirak, Ananto and Srichantrawirote, 2005). One of the most important factors is the lack of ICT knowledge and skills to integrate into teaching. Professional developments were conducted to solve this kind of problem and some results related to the problems found in professional development were reported. Little (1999) stated that there were too often no structured method was in place to help teachers improve practice by encouraging them to interact with or watch the other

colleagues in action. Fisher (2004) provided some problems teachers found when they had their professional development as follows;

4.1 There is a need for educational leaders to address the perceptions of teachers in order to effectively meet teacher professional development needs.

4.2 Teachers generally could not connect what they had been trained to their actual practice in their classroom.

4.3 Professional development training sessions are not based on expressed teacher needs but on a remediation and quick-fix mentality.

4.4 During traditional professional development, there is no forum for discussion of the trial and error of the idea after they are put into practice.

4.5 Teachers who not received feedback on implementation of the new teaching strategies soon forget them.

4.6 Many professional development sessions are passive and measure the participants' satisfaction with the experience and their without preparation assessment.

4.7 Teachers are not involved in the planning of professional development so they do not have their needs met during professional development activities.

4.8 School administrators often do not attend the professional development sessions and unnoticed that the activities are so dispersed.

Beside some problems reports, some technology tools for blended professional development were considered to adopt as tools for the present study. Moreover, to reach exactly the teacher needs, the appropriate procedure in terms of types of training should be studied carefully. The types of training will be presented in the next section. will be presented and discussed in the next section.

Types of Training by using ICT

There are three main types of training. They are as follows;

1. Face to face training

Face to face training refers to the actual training conducting in place leading by an expert for teaching or practicing some audience for specific topics. The process mainly focuses on lecturing by the presenter and allowing questioning and answering at the end of each section. Moreover, the face to face training also refers to facilitating, consulting, coaching, teamwork, strategic planning, problem solving,

tough conversation, and performance evaluation. However, face to face training is also defined as a negative activity that may not completely be used for effective training (Gail and Parr, 2009; Walls, 2000).

2. Online training or Virtual education

Online training or virtual education refers to instruction in a learning environment where the teacher and students are separated by time or space, or both, and the teacher provides course content through course management applications, multimedia resources, the Internet, videoconferencing, etc. Students receive the content and communicate with the teacher via the same technologies (Kurbel, 2001). The characteristic of online training is an online education using the Internet. This term is primarily used in higher education where so-called Virtual Universities have been established. Many virtual study programs are mainly text based, using HTML, PowerPoint, or PDF documents. Multimedia technologies have been investigated for many years and eventually found their way into practice (Market Wire, 2008; Mass Hightech, 2009, Loutchko, Iouri; Kurbel, Karl; Pakhomov, Alexei, 2002). There were some advantageous stated by educators that online learning provided it allowed people to take classes regardless of where they live or what their schedules may be (often called "anytime, anyplace"). The asynchronous nature of the class allowed students time for reflection and research and to compose their messages with more thought. Unlike face-to-face classes, there is time and space for everyone to respond to the question to be discussed or the problem to be solved. The interactions of the participants created a synergistic effect and resulted in high quality dialogue. The asynchronicity, along with the anonymous (faceless) nature of the medium, tend to level the playing field. There were no preconceptions based on visual cues therefore students learn about each other from the inside out. Without the traditional role of the teacher standing up in the front of the class, the learning experience tends to become more student-centered, resulting in students being active participants and taking on more responsibility in learning. However, some weaknesses of online learning were stated, as learners must have access to a computer and an internet provider, they also need to be computer literate enough to navigate the internet, read and send emails, and create and attach documents. Moreover, the failure in providing effective and

appropriate supports could discourage learners and finally cause them to give up learning (WisTREC, 2012).

3. Blended Training or Blended Learning (BL)

The blended or hybrid training definitions were documented by many educators (Graham, Allen, and Ure,2003; Bersin andAssociates, 2003; Orey, 2002a, 2002b; Singh and Reed, 2001; Thomson, 2002; Driscoll, 2002; House, 2002; Rossett,2002; Reay, 2001; Rooney, 2003; Sands, 2002; Ward and LaBranche, 2003; Young, 2002) and it could be described as 1) combining instructional modalities (or delivery media), 2) combining instructional methods, and 3) combining online and face-to-face instruction. Blended training or blended learning could also be defined as a blending of different learning methods, techniques and resources and applying them in an interactively meaningful learning environment. Learners should have easy access to different learning resources in order to apply the knowledge and skills they learn under the supervision and support of the teacher inside and outside the classroom. This approach will combine face-to-face instruction with computer-mediated instruction. It also applies science or IT activities with the assistance of innovative educational technologies using computer, cellular or I-phones, Sky TV channels and other electronic media. Learners and teachers work together to improve the quality of learning and teaching, the ultimate aim of blended learning to provide realistic practical opportunities for learners and teachers to make learning independent, useful, sustainable, and ever growing (Graham, 2005).

Blended learning increases options for greater quality and quantity of human interaction in a learning environment. Blended learning offers learners the opportunity "to be both together and apart" (Garrison, 2004). Blended learning can also be applied to the integration of e-learning with a Learning Management System using computers in a physical classroom, along with face-to-face instruction (Worthington, 2008).

According to the benefits reported of the blended learning, this study will adopt the blended learning as the training methodology which is appropriate to all the participants who are all away from the main campus. In order to adopt the blended learning into account appropriately, the blended models will be discussed in the next section.

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Blended Learning

As mentioned above that the blended or hybrid training definitions were documented by many educators (Graham, Allen, and Ure,2003; Bersin andAssociates, 2003; Orey, 2002a, 2002b; Singh and Reed, 2001; Thomson, 2002;Driscoll, 2002; House, 2002; Rossett,2002; Reay, 2001; Rooney, 2003; Sands, 2002; Ward and LaBranche, 2003; Young, 2002.) and it could be described as 1) combining instructional modalities (or delivery media), 2) combining instructional methods, and 3) combining online and face-to-face instruction. Blended training or blended learning could also be defined as a blending of different learning methods, techniques and resources and applying them in an interactively meaningful learning environment. NIIT categorizes blended learning into three models: 1) skill-driven learning, which combines self-paced learning with instructor or facilitator support to develop specific knowledge and skills, 2) attitude-driven learning, which mixes various events and delivery media to develop specific behaviors, and 3) competency-driven learning, which blends performance support tools with knowledge management resources and mentoring to develop workplace competencies(Valiathan, 2009). Table 1 provides a summary of characteristic of all three models.

Table 1 Summary of characteristic of all three models

Model	Reasons	Activities
Skill-Driven Model:	Learning specific knowledge and skills requires regular feedback and support from the trainer, facilitator, or peer.	1. create a group-learning plan that's self-paced but bound to a strict schedule 2. provide self-paced learning material with instructor-led overview and closing sessions

Table 1 (Cont.)

Model	Reasons	Activities
		3. demonstrate procedures and processes through synchronous online learning labs or a traditional classroom setting 4. provide email support design long-term projects
Attitude-Driven Model	Content that deals with developing new attitudes and behaviors requires peer-to-peer interaction and a risk-free environment.	1. synchronous 2. Web-based meetings (Webinars) 3. assign group projects (to be completed offline) 4. conduct role-playing simulations
Competency-Driven Model	To capture and transfer tacit knowledge, learners must interact with and observe experts on the job.	assign mentors to develop knowledge repository (LCMS/LMS)

1. Skill-driven model

Blended learning that skill-driven mixes interaction with a facilitator through email, discussion forums, and face-to-face meetings with self-paced learning, such as Web-based courses and books. This type of approach is analogous to a chemical reaction, in which interaction with the instructor or facilitator acts as a catalyst to achieve the desired reaction--learning. Table 2 illustrates kinds of

technology-based techniques and non-technology based techniques of the Skill-driven blended learning.

Table 2 Skill-Driven Blended Learning Plan

Plan	Technology-based techniques	Non-technology based techniques
Announcement	1. LMS 2. email push	1. flyer 2. mail 3. home phone
Overview session	1. email 2. Webinar	traditional classroom
Self-paced learning	1. web-based tutorial 2. e-books 3. EPSS 4. simulations	1. articles 2. books 3. job-aids 4. on-the-job training
Query resolution	1. email 2. FAQ 3. instant messenger	face-to-face meeting
Demonstration	1. web meeting 2. simulations	traditional classroom
Practice	Simulation	1. workbook 2. assignment
Feedback	e-mail	1. face-to-face meeting 2. print report
Closing session	1. e-mail 2. Webinar	traditional classroom

2. Behavior-driven model

This approach blends traditional classroom-based learning with online collaborative learning events. At times, the nature of the content, as well as the desired outcome (developing attitudes and behavior) necessitates the inclusion of collaborative learning that facilitated through face-to-face sessions or technology-enabled collaborative events. Developers should use this approach to teach content that requires learners to try out new behaviors in a risk-free environment. Table 3

illustrates both technology-based techniques and non-technology based techniques of the Behavior-driven blended learning.

Table 3 Behavior or attitude-driven model plan

Plan	Technology-based techniques	Non-technology based techniques
Announcement	LMS or email push	flyer, mail, or home phone
Overview session	1. email 2. webinar	traditional classroom
Self-paced learning	1. web-based tutorial 2. e-books 3. simulations	1. articles 2. books 3. workbooks with "if-then" decision tables
Query resolution	1. email 2. FAQ 3. instant messenger	face-to-face meeting with expert
Assessment	Simulations	print test
Collaborative session	1. Webinar 2. chat	role-playing with peers
Practice	Simulations	role-playing with peers
Feedback and closing session	1. email 2. Webinar	traditional classroom

3. Competency-driven model

The success of knowledge workers depends on how quickly employees make decisions in the workplace. While part of the decision-making process is guided by common facts and working principles, people also need tacit knowledge that often retained by experts. Learning that facilitates the transfer of tacit knowledge requires a competency-driven approach. Because people absorb tacit knowledge by observing and interacting with experts on the job, activities may include a blend of online

performance support tools with live mentoring. Table 4 illustrates both technology – based techniques and non-technology based techniques of the Competency-driven blended learning.

Table 4 Competency-driven blended learning

Plan	Technology-based techniques	Non-technology based techniques
Assign guides or mentors	email	home phone
Create a community	space on the Internet or intranet	study groups
Practice	1. e-mail 2. discussion forums 3. simulations	1. face-to-face meetings 2. workshops 3. home phone
Hold discussion	1. discussion forums 2. chat	1. face-to-face meetings 2. workshops 3. home phone
Resolve queries	1. e-mail 2. instant messenger	face-to-face meeting
Capture learning	stories and data compiled in a knowledge repository (LMS/LCMS)	white papers

The present study adapted these three models and developed an appropriate one for the present study. However, the new ICT application and new technology were considered as online training tools, such as wiki, blog, and some more web 2.0 site since some tools recommended in those models are nowadays rather out of date. The next section will present the blended learning framework which were used as one element to be considerd carefully in developing the training curriculum.

4. Blended Learning Framework

Khan (2001) developed a framework providing factors should be considered to conduct blended learning effectively. The factors recommended are institutional, pedagogical, technological, interface design, evaluation, management, resource support and ethical which should be carefully considered before conducting a blended training. Figure 1 shows the entire eight factors. This study will also consider the factors provided in this learning framework to find the most suitable setting for all the participants in the study.

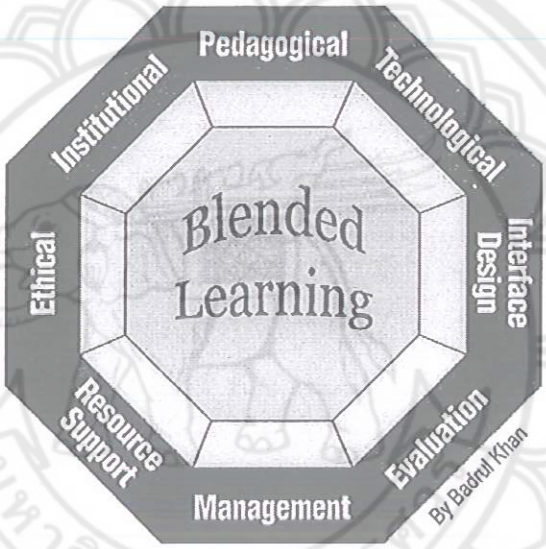

Figure 1 Khan's Octagonal Framework

5. The Impact of Blended Learning

Collopy and Arnold (2009) conducted a study on online and blended learning environments in undergraduated teacher education. They found that the blending of face-to-face and online environments provided a reciprocal structure for student learning. The face-to-face environment supported team development, commitment and accountability to team members, and the processing of content with the instructor and class members. The online space supported the face-to-face environment by giving teacher candidates time to think, process, and have online conversations outside of scheduled class time. Individual accountability was provided

within the online environment as each individual was required to be engaged and to contribute within each module. The results of the study were positive and it helped improving the quality of learning.

Voogt, Almekinders, Akker, and Moonen (2004) studied the integration of technology in teaching of teachers in secondary school by providing arrangements as services for teachers. The arrangements consisted of workshops, exemplary curriculum materials and computer mediated communication. The blended professional development was used and the result found that teachers used technology to communicate and contribute their knowledge positively.

Bonk, Kim and Zeng (2004) reported 10 trends of blended learning as positive impact towards learners. They stated, 1) mobile blended learning, 2) greater visualization, individualization and hands-on learning, 3) self-determined blended learning, 4) Increased Connectedness, community and collaboration, 5) Increased Authenticity and On-demand learning, 6) Linking work and learning, 7) Changed Calendaring (learning when they want), 8) Blended Course Designations, 9) Changed Instructor Roles, and 10) The Emergence of Blended Learning Specialist. They promoted these trends to help improving pedagogy for blended learning effectively.

Resta (2005) stated defined e-learning as the use of the Web or electronic networks capable of instant updating, storage/retrieval, and distribution to: 1) share instructional and information resources and expertise to enrich the learning environment; 2) provide courses, learning applications, and solutions that go beyond the traditional paradigm of teaching and learning; 3) combine with traditional or other teaching methods and styles in what is referred to as blended or hybrid learning; and 4) provide informal learning opportunities and support for communities of practice.

Deghaidy and Nouby (2008) conducted a blended-learning cooperative approach (BeLCA) on Pre-Service Teachers (PST) achievement, attitudes towards e-learning and cooperativeness in Egypt. The results suggested that PSTs in the experimental group had higher achievement levels in their post-overall-course-test, comprehensive - score, and attitudes towards e-learning environments compared to the control group.

The next section will present the length of time for blended learning to ensure the appropriateness of the developed professional development curriculum.

6. The Length of Time for Blended Learning

Although there is no clear suggestion about the length of time for professional development, the need for time is real. The National Staff Development Council (Sparks and Hirsh, n.d.) recommends that at least 25 percent of an educator's time be devoted to professional learning. Such time is essential for mastering and incorporating new practices into classroom instruction. Canady and Rettig (1995) suggest that schools schedule at least five, and preferably 10, days of workshops when implementing major instructional changes (such as block scheduling).

In order to developed the professional development curriculum appropriately and effectively, The technology selected for blended professional development is needed to be considered. The next section will present and discuss it

Technology Selected for Blended Professional Development

Technology selected for the blended professional development includes the effective and powerful technology tools recommended by educators. All of them are open-source software and free services that all the participants can apply into their teaching without facing the budget constraint.

1. CMS (Content Management System) or LMS (Learning Management System)

CMS (Content Management System) or LMS (Learning Management System) is software that is used to create and manage the content for a Web site. It provides for the storage, maintenance and retrieval of HTML and XML documents and all related image, audio and video files. Typically dependent on a particular database, which may be part of the package or available separately as in the case of open source versions, a content management system (CMS) may provide all the programs necessary for Web site development. It may include or accept plug-ins that provide banner advertising, shopping carts, blogs, wikis, newsletters, opinion polls, chat rooms and forums. Such systems may be able to publish not only to a web site, but to a CD/DVD or print as well (Computer Desktop Encyclopedia, 2008). CMS is also known as Course Management System that is used for educational purposes. Currently, many educational institutes have developed a free open source software package for online learning.

There are many CMS or LMS available for educators both for commercial use and open sources. Commercial LMS includes Blackboard, WebCT, IBM Lotus LMS, Education Shpere, Dell Learning System, De-Learn, and i2 LMS. The Open-Source LMS are, Moodle, ATutor, Claroline, LearnSquare, VClass, Sakai, and ILIAS. Moodle is one of the most popular CMS designed to help educators easily create quality online courses (Dougiamas, 2002). In this study, Moodle is used as a tool for professional development because there is an on-line community for Moodle users to exchange and assist the other users online, and Moodle developing team still keep developing and releasing the update version for more stable and reliable LMS. Moreover, Moodle provides various kinds of features, tools, and teaching material developing tools for teachers. The next section will discuss about these tools in detail.

2. Features and Tools in Modular Object-Oriented Dynamic Learning Environment (Moodle)

Dougimas (2008) stated some features available in Moodle, as quote, the following:

2.1 Moodle runs without modification on Unix, Linux, Windows, Mac OS X, Netware and any other system that supports PHP (which includes almost every webhosting provider).

2.2 Moodle is designed in a modular way, and allows a great deal of flexibility to add (and remove) functionality at many levels.

2.3 Moodle upgrades very easily from one version to the next - it has an internal system to upgrade its own databases and repair itself over time.

2.4 Moodle requires only one database (and can share it with other applications if necessary).

2.5 Moodle includes comprehensive database abstraction that supports many major brands of database.

2.6 Emphasis on strong security throughout. Forms are all checked, data validated, cookies encrypted etc

2.7 Moodle promotes a social constructionist pedagogy (which includes collaboration, activity-based learning, critical reflection, etc)

2.8 Moodle is suitable for 100% online classes as well as supplementing face-to-face learning

2.9 Moodle has a simple, lightweight, efficient, compatible, low-tech browser interface

2.10 Course listings show descriptions for every course on the server, including accessibility to guests.

2.11 Courses can be categorized and searched - one Moodle site can support thousands of courses

2.12 Most text entry areas (resources, forum postings, journal entries etc) can be edited using a capable, embedded WYSIWYG HTML editor

Moreover, Moodle support auto linking filters and media plugs in filters, and multi-languages contents filters.. For auto linking, several of the activity modules support auto linking filters and this support makes the learners to see automatic hyperlinks every time the name of a resource mentioned in the current course. Media plugs in filters allow teacher to integrate all kind of media source into the course to encourage and provide audio and visual sample for their learners by providing automatically embed multimedia which is linked by the teacher to the learners. Multi-language filters allow teacher to change the interface of language used in the course appropriately. Moodle provides various modules for teacher to choose and use them appropriately. The modules or tools available, as quote Dougimas (2008) in the Moodle include below.

Assignment: Assignments enable teachers to grade and provide comments for uploaded files and assignments created on and off line. The teacher may choose whether to prevent late submissions, whether to allow students to resubmit their assignment (for re-grading) and whether to receive email alerts when students add or update their submission (except for offline assignments). For this module, learners can see their own scores and follow their grades along the course.

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. Moreover, Moodle allows the teacher and learners to see the previous dialogue which can be advantageous for the leaner who miss the activity to read the content later.

Choice: The Choice module allows teacher to ask 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. The result of the vote can be chosen to be shown or be hidden. At the result, teachers can see all the names of learners who vote in each group of the the choices clearly and easily.

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 for formats, and can include attachments. Moodle also allows the email alert message to teacher when a topic posted. Teacher can create a thread that all the learners have to reply in only a single topic or allows the learners to create the topic themselves

Glossaries: This activity allows participants to create and maintain a list of definitions, like a dictionary. Learners can input the text, link to a photo, media file, or web sites. The entries can be searched or browsed in many different formats. Teacher can decide rating for a definition added for learners to add work for score.

Hot Pot: This module allows teachers to create multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill quizzes using Half-Bake Hot Potatoes software. The score of the activities created by Half-Bake Hot Potatoes software will be recorded as the learners' scores as well as the number of their attempts in each test or exercise item.

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. This module is appropriate for self learning section in the course.

Quiz: The quiz module allows the teacher to design and set quiz tests, consisting of multiple choice, true-false, and short answer questions and more. All the quiz items will be stored in the bank and can be selected to a quiz page variously. Each attempt is automatically marked, and the teacher can choose whether to give feedback or to show correct answers.

Resource: Resources or the content in the course can be prepared files uploaded to the course server; pages edited directly in Moodle; or external web pages made to appear part of this course. Moodle also allows media plugs in filter for this module.

SCORM Package: SCORM or Sharable Content Object Reference Model is a collection of standards and specifications for web-based e-learning. It is a collection of specifications that enable interoperability, accessibility and reusability of web-based learning content. Basically, it is a pack of content and all exercises created by some software that support creating SCORM such as, Macromedia Dreamweaver, Microsoft Producer, Macromedia Flash and Macromedia Captivate.

Survey: The Survey module provides a number of verified survey instruments that have been found useful in assessing and stimulating learning in online environments. They are ready made questionnaires prepare for survey in a specific purposes relate to the course. There are three kind of survey, Critical Incident Survey, Constructivist On-line Learning Environment Survey and Attitudes to Thinking and Learning Survey.

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.

Workshop: 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. The score assessed by their friends will be calculated for means and shows automatically. Teacher can choose to use the score assessed by learners or given by teacher.

Journal: This module is a very important reflective activity. The teacher asks the student to reflect on a particular topic, and the student can edit and refine their answer over time. This answer is private and can only be seen by the teacher, who can offer feedback and a grade on each journal entry. It's usually a good idea to have about one Journal activity per week.

Moodle is selected for this professional development since it is widely used in many universities in Thailand and a lot of secondary schools in Nakhon Ratchasima. The information and contents created in the professional development will be available in Moodle and it can be shared to the other academic institutes easily via the Internet. Moreover, the target participants are about to have a chance to use the Internet at their workplaces in response to the policy of the Ministry of Education to

promote online teaching. Therefore, Moodle is the tools selected for the training and expected to be the teaching tool of the participants as well.

3. The online services selected for the blended professional development

A number of free online services will be adopted as tools for the professional development as well as the teaching tools in the participants' future online lessons. They are selected according to their services as follow,

3.1 Weblog- Blogger, Pbworks, Google docs, Voicethread

3.2 Image hosting, free photo sharing and video sharing: Photobucket, Teachertube, and Youtube

3.3 File hosting and sharing: Mediafile and Tempf

All the selected online services will be integrated into the professional development according the purpose of guidance for creating online lessons. Besides, to be able to conduct the professional development effectively and meets the trainees' need, the curriculum development and related studies should be studied effectively. The next section will discuss about it.

Curriculum Development

Curriculum development is the process of designing and preparing all the courses offered in a particular subject and it describes all the ways in which training or teaching organization plans and guides learning. This learning can take place in groups or with individual learners. It can take place inside or outside a classroom. It can take place in an institutional setting like a school, college or training centre, or in a village or a field. It is central to the teaching and learning process (Sil International,1999). Smith (2000) suggested that learning is planned and guided and classified curriculum theory and practice as follow: 1) Curriculum as a body of knowledge to be transmitted, 2) Curriculum as an attempt to achieve certain ends in students – product, 3) Curriculum as process, and 4) Curriculum as praxis. It is helpful to consider these ways of approaching curriculum theory and practice in the light of Aristotle's influential categorization of knowledge into three disciplines: the theoretical, the productive and the practical.

Curriculum development also refers to the way of thinking about curriculum theory and practice was heavily influenced by the development of management thinking and practice. In other words, the curriculum was not to be the result of 'armchair speculation' but the product of systematic study which emphasis on the formulation of behavioral objectives. These concerns translate into an ordered procedure of productive thinking set out below.

Step 1: Diagnosis of need

This step refers to a needs analysis includes all the activities used to collect information about your students' learning needs, wants, wishes, desires, and others.

Step 2: Formulation of objectives

This step refers to designing the objectivs for the training curriculum which should be concrete, well-define and straight-forward. Morever, the objectives should be specific, measurable, action-oreinted, realistic and time-bound.

Step 3: Selection of content

This step refers to the designing or selecting the content for training considerting to the data obtained from the needs analysis steps.

Step 4: Organization of content

This step refers to the arrangement of the selected content in the appropriate order that should be considered making sure that the activities are pratical.

Step 5: Selection of learning experiences

This step refers to the considering of the training activities and tasks for the training which should be considered precisely to ensure the trainees are able to follow and accomplish after participate the selected activities.

Step 6: Organization of learning experiences

This step refers to the arrangement of the selected activities in the appropriate order that should be considered making sure that the activities are pratical and follow the order of the contents.

Step 7: Determination of what to evaluate and of the ways and means of doing it. (Taba, 1962)

This step refers to the considering ways to assess the trainees' improvement and evaluate the expected knowledge or performance of the trainees after training.

The attraction of this way of approaching curriculum theory and practice is that it is systematic and has considerable organizing power. Central to the approach is the formulation of behavioral objectives - providing a clear notion of outcome so that content and method may be organized and the results evaluated. Some educators suggested a curriculum should contain the following educational components: 1) Overall educational goals, 2) Competency-based goals and objectives for each assignment at each educational level, 3) Regularly scheduled didactic sessions, and 4) evaluation sessions. (PKRU 2009, Taba 1962, Connecticut State Department 2005). The component process could be classified as follow,

1. **Planning:**
   1.1 Convening a Curriculum Development Committee
   1.2 Identifying Key Issues and Trends in the Specific Content Area
   1.3 Assessing Needs and Issues
2. **Articulating and Developing:**
   2.1 Defining Program, Grade-Level and Course Goals
   2.2 Developing and Sequencing of Grade-Level and Course Objectives
   2.3 Identifying Resource Materials to Assist with Program Implementation
   2.4 Developing and/or Identifying Assessment Items and Instruments to Measure Student Progress
3. **Implementing:**
   Putting the New Program into Practice
4. **Evaluating:**
   4.1 Updating the Program
   4.2 Determining the Success of the Program

According to the information mentioned above, they would be used as essential elements to be considered to develop the curriculum for the professional development. However, to be able to conduct the professional development practically, instructional design is needed to be discussed for concrete information gathered before begin developing the curriculum. This will be discussed next section.

Teacher Needs Assessment

Needs assessment is a communication process between citizens of the service area and the institution, with goal of incorporating information about these clientele into the planning phases of the institution (Nicken, Purga and Noriega,1980). For teachers, teacher needs should be ascertained accurately, realistically, in dept, and continually (Edelfelt 1980). There are many approaches to needs assessment as quote. Five are discussed here can be used with teachers and students.

1. Pulling Together Existing Data

A substantial body of unorganized data exists in most school systems that is already a type of needs assessment. The needs are always represented needs of some sorts, directly or indirectly.

1.1 Teacher's and guidance counselors' records, evaluations of students by teachers, students' cumulative files, and data on curriculum development.

1.2 Evaluation forms and reports done for regional accreditation.

1.3 Staff development studies and needs assessments done by professional association of the local, state, and national levels.

1.4 University and state department of education studies and evaluations.

Beside the existing information, some information may be hidden behind and need way to obtain. Conducting a survey can be a good way to pull out the hidden data. This will be discussed in the next section.

2. Conducting a Survey

Surveys are frequently seen as comprehensive approaches to determining needs, and therefore they are often used exclusively. They can seve as an important tool but should be used in combination of others. Several limitations of the single approach are reported as follow;

2.1 Survey questions are often drawn up by people other than those who will be most directly affected by the answers (primarily teachers, students, and parents)

2.2 A survey is often administered as a one-time exercises whereas needsa dn perceptions of needs change throughout the year.

2.3 The results of surveys are usually normative; they report the most common or the most central among many points of view. Lost in the process of summarizing are the individual needs of respondents and schools.

2.4 Survey usually subjects respondents to the limitations of papers and pencil. They often force choices. The options they provide may not included the choices that are preferable to respondents, and respondents often have no opportunity to indicate the priority they give to a particular need or set of needs.

2.5 Even when a survey instrument is well designed to gauge needs and priorities, answers are too limited to give advice on how to get from assessing needs to satisfying needs.

These five limitations are needed to be well considered before designing a survey tool. To confirm the data gather is appropriate, using observations and advisors can be made and it will be discussed next section.

3. Using Observation and Advisors

Observation is another way to do need assessment. There are many forms of observation. They are teachers or students self observation, observation of student by teachers or others, and observation of teachers by students, supervisor, or advisors. Some educators recommended that observation should be made on both teachers and students. Advisory work may be made by variety of people. For example, advisor is an experienced teacher who works part-time or a consultant from another school or from a university school of education. Video tape, used a simultaneously in the front and the back of the classroom to capture the dynamics of what occurring, is one way to provide useful documentation for self-observation and analysis and for discussion with an advisor. Another approach to getting several Perceptions of classroom activity is being explored in a British experiment in which students', teachers', and advisors' observation techniques, the advisor can serve as both ally and mentor of the teacher in assessing and meeting classroom needs.

Some kind of information need interactive communication to pull out the data, conducting interviews will also be discussed as tools for the study next section.

4. Conducting Interviews

Interview is a qualitative way to gather some needs from the teachers effectively under the well-prepared questioning. Interviews with individual teachers or groups of teachers can provide insight and information for needs assessment. Interviewing is a skill. Thus the results of interviewing will be no better than the skill of interviewer. So it is important to learn how to interview and whom to interview. The most deductive interviews seek to elicit needs, priorities, and discussion aimed at clarifying and amplifying concerns that have been established. The interviewer who feeds back what is heard so that interviewees can react, assures full and accurate communication. Interview techniques vary in approach, 1) direct approach which written responses to basic questions are used as basic for small-group discussions in short sessions, 2) The small one-to-one interview that express needs into background and motivation and seeks additional information for design programs to meet specific needs, 3) interview address specific issues and elicits responses in formally. It casts light not only on teachers' needs but on their creativity in developing solutions to meet those needs, and 4) Interview which follows an informal self-assessment. A teacher may take stock of needs and then confer with an in-service coordinator or advisor about ways of satisfying those needs.

According to all four approaches mentioned above, all of them will be considered carefully before conducting to all the teachers in order to gather the expected data efficiently and effectively. However, in order to conduct the training appropriately, the studying strategies are needed to be considered as an important factor to reach the goal of the training. This will be presented and discussed in the next section.

5. Studying Strategies

Learner needs can be a key factor for the effective professional development. The interrelationship of needs underlies the purposes of the federal Teacher Center legislation, which states that centers are to improve curriculum and instruction to better meet the needs of learners. In order to prepare the professional development that meets the needs of the teachers. There are a number of ways to study students. They may be used by individual teachers, groups of teacher working with the

same students, or whole building faculties working to improve school program based on the needs of students. They are,

5.1 Sentence completion: give students the first part of a sentence and ask them to complete it in writing or on tape. The value of this technique is that it gives evidence of the different ways that different students react to or perceive the same issue or question. If several teachers within a school use the technique, their students' replies can be categorized by such variable as sex, age, and grade, and compared.

5.2 Open-ended questions: as topics for drawing writing, taping, class discussion, or small-group discussion. For example, if you were a teacher, what would you do?

5.3 Pictures taken by students: have students take snapshots of such subjects as a favorite sport at school, a pet, a favorite person, or perhaps just "something favorite." Discuss each student's snapshots with him or her, or have the students write or tape some remarks about the snapshots.

5.4 Taped data: Put the cassette tape recorder in the classroom, and teach students how to operate it. Then tell students that anytime they have an idea or question or comment that they want to communicate to you, they can record it if they wish. After a reasonable time period, organize the data into a form that will make them useful in planning.

5.5 Survey of students' life outside school: develop a questionnaire on students' life outside school – activities at home and in the neighborhood, interests and hobbies, skills and talents, favorite movies and television programs, favorite types of entertainment, etc. Sample questions: How many brother and sisters do you have, and how old are they?

5.6 Student-teacher conferences or interviews: arrange individual conference or interviews with students to get at such matters as academic performance, out-of- school activities, sociability, attitudes toward school, interests, and feeling about particular events. The conferences or interview can be formally scheduled, with students get questions in advance, or they can be conducted informally and spontaneously, as an opportunity arises.

5.7 Correspondence with other students: have interested students correspond with a student in another school or another country. To be useful for student study, the technique requires that the teacher see the student's letter.

5.8 Class meeting and discussion: hold class meeting and discussion to get many students' views on a single topic or to let students air their pleasure and complaints about school life.

5.9 Parent questionnaires or interviews: Survey or interview parents on their own and their children's attitudes toward school. Topics might include parents' expectations and ambitions for their children, students' and parents' roles in decision making, the schools' role in students' personal and social development, treatment of students who do not complete their grade, relative emphasis to be placed on various curriculum areas, homework, appropriate behavior in school, and discipline. The questionnaire might be adapted for use with students or with teachers, and the data from each source might be compared.

5.10 Observation: observe students at work and at play, in school and at home. Observation can be formal, such as when students' participation in class discussion in charted or it can be informal, such as when an incident of actual or potential significance is noted on a card or in a log. It can focus on individuals or situations. Observation is most useful when done with a purpose or to test a hypothesis.

5.11 Shadowing: much can be learned about keen observation by shadowing someone else's student first; choosing a student in another school eliminates any threat to the host teacher and assures more objectives observations. Observe the student's behavior for an extended period. Following the intensive observation, interview the student, and, if possible, accompany the student home to learn about his or her home environment.

5.12 Case studies: study a student intensively in a variety of ways, observation, interviews, cumulative records, and ect, and write a description of the student and his or her life as you see it.

5.13 Sociometry: the study and measurement of relationships within a group. Use a sociometric question to gain a better understanding of the patterns of interaction among class members. Answer should be interpreted cautiously, for they

may not represent reality or indicate the depth of a student's feeling. Assistance in interpreting answers and in writing questions can usually be obtained from a school psychologist or guidance counselor.

5.14 Teacher meetings: meet regularly with groups of teachers from your school to discuss student behaviors that call attention to needs. Such a technique not only yields information about individual students but also helps teachers get a more accurate perception of their skill in recognizing students' needs.

5.15 Advisors: Invite an advisor into the classroom and observe the advisor's techniques of discovering students' needs. For example, conversing with individuals and groups, asking questions, listening, taping, engaging students in fantasy play or dramatics, helping students draw or paint expressively, etc.

However, to be able to create one well-prepared and appropriate professional development, some learning theories were needed to be considered. The information related to needs assessment could help designing the survey and interview tools appropriately to gather data from the participants. Some or all of them could be taken into account for efficient and effective data gathering. To be able to support the training that the participants are from different places and different teaching and learning styles, the situated learning will be focused as a potential module for the training. The next section will discuss on the situated learning to gather more information to ensure the effective professional development

Instructional Design

Instructional Design or ID is the systematic development of instructional specifications using learning and instructional theory to ensure the quality of instruction. It is the entire process of analysis of learning needs and goals and the development of a delivery system to meet those needs. It includes development of instructional materials and activities; and try out and evaluation of all instruction and learner activities (Berger, 1996).

Instructional design models are always raised to conduct the professional development appropriately; Gros, et al. (1997, p. 48) state that "Instructional design models have the ambition to provide a link between learning theories and the practice of building instructional systems." There are many instructional design models but

many are based on the ADDIE model with the phases analysis, design, development, implementation, and evaluation. Moreover, the ARCS model of motivation is suggested in to be considered as follow,

1. ADDIE Model

The ADDIE model is a systematic instructional design model consisting of five phases: (1) Analysis, (2) Design, (3) Development, (4) Implementation, and (5) Evaluation. Various flavors and versions of the ADDIE model exist (Dick, W. and Carey, L., 1996) The generic term for the five-phase instructional design model consisting of Analysis, Design, Development, Implementation, and Evaluation. Each step has an outcome that feeds into the next step in the sequence. There are probably over 100+ different variations of the generic ADDIE model. The five phases of ADDIE are as follows:

1.1 Analysis: During analysis, the designer identifies the learning problem, the goals and objectives, the audience's needs, existing knowledge, and any other relevant characteristics. Analysis also considers the learning environment, any constraints, the delivery options, and the timeline for the project.

1.2 Design: A systematic process of specifying learning objectives. Detailed storyboards and prototypes are often made, and the look and feel, graphic design, user-interface and content is determined here.

1.3 Development: The actual creation (production) of the content and learning materials based on the Design phase.

1.4 Implementation: During implementation, the plan is put into action and a procedure for training the learner and teacher is developed. Materials are delivered or distributed to the student group. After delivery, the effectiveness of the training materials is evaluated.

1.5 Evaluation: This phase consists of (1) formative and (2) summative evaluation. Formative evaluation is present in each stage of the ADDIE process. Summative evaluation consists of tests designed for criterion-related referenced items and providing opportunities for feedback from the users. Revisions are made as necessary.

ADDIE model has been adopted to apply and implement by many educators. Some educators suggested ARCS model for motivation to ensure the effectiveness and efficient of the developed professional development. It will be discussed next section.

2. ARCS Model for Motivation

Motivation is an important component of design; the groups of participants who have a range of individual preferences, abilities, and altitudes often complicate it. Motivated learners become active and curious, which has a positive effect on their performance. The ARCS model provides a framework for incorporating motivational techniques throughout a lesson (Malachowski M.J., 2002)

2.1 Attention - Capture participants' interest and stimulate an attitude of inquiry. For example: ask questions; use emotional or personal information; create a mental challenge; use human-interest examples.

2.2 Relevance - Make the instruction relevant to the learners' needs and goals. Match the instruction to the learning styles and personal interests of the learners. Tie in the instruction to the learners' experience and help them to see the relevance.

2.3 Confidence - Build in learners a positive expectation of success. Make sure that the learning experience helps learners to display competence and success as a result of their efforts and abilities. It should be an achievable rather than overwhelming learning experience.

2.4 Satisfaction - Encourage and support their intrinsic enjoyment of the learning experience, as well as providing extrinsic rewarding consequences for their successes. Also build a perception of fair treatment. Reinforce the learning by providing useful and fair feedback.

Throughout the models mentioned above, there are many instructional designs developed for particular professional development. According to this study, Sudsuang Yutdhana's model for professional development was selected to be developed to support the present professional development. This will be discussed in the next section.

3. Sudsuang Yutdhana's Model for curriculum development

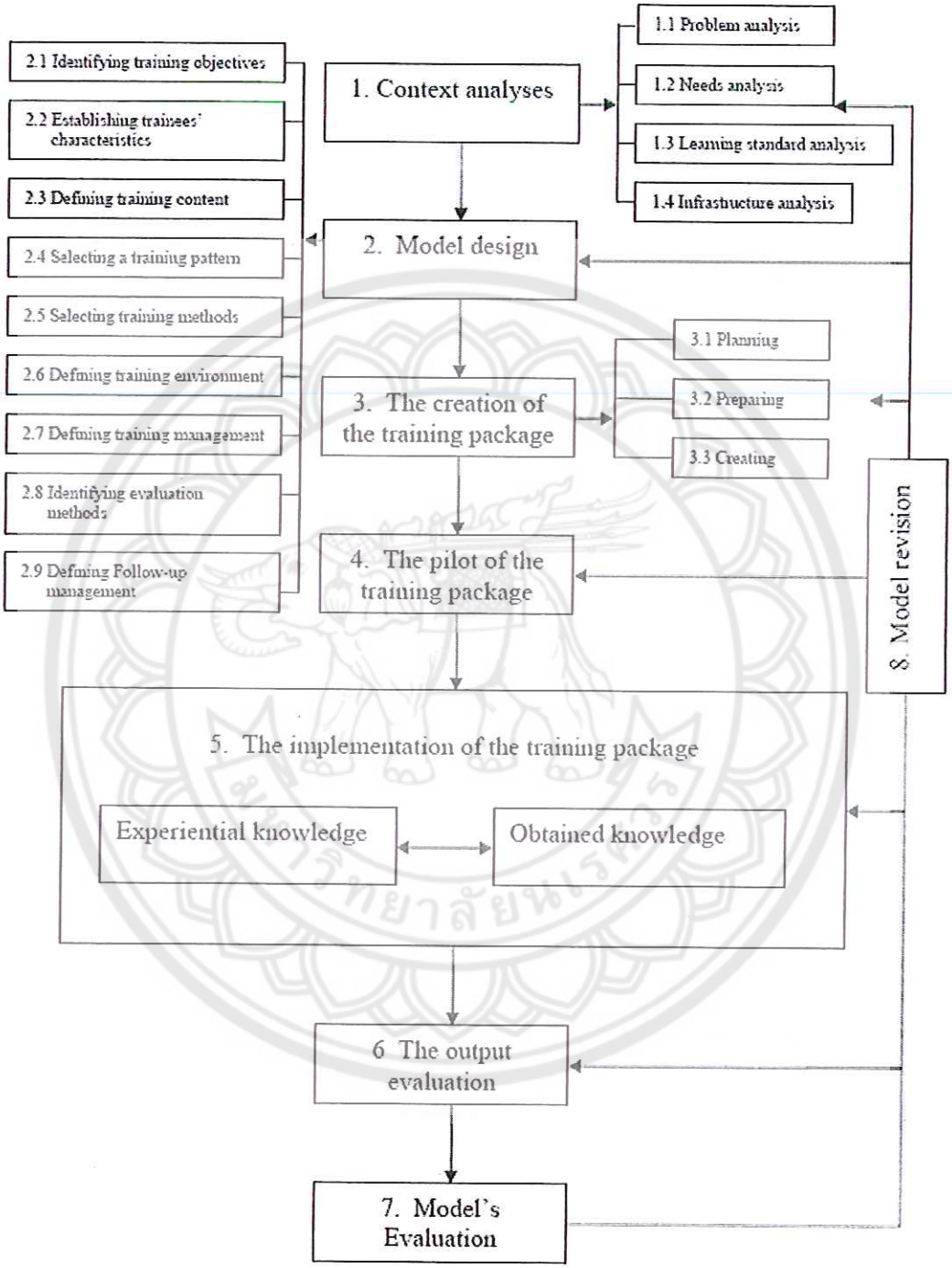

Figure 2 Sudsuang Yutdhana's Model

Figure 2 shows the model of Sudsuang Yutdhana (Yutdhana , 2004) which was designed for the EFL teachers to integrate internet into their teaching. The model provides four steps of contexts analysis and nine steps of model designs to ensure about the data gathered before creating the teaching materials. Moreover, after the pilot of training package, there are two kinds of implementation for experiential knowledge and obtained knowledge. This model was selected as the core model to be adapted for developing the blended professional development for this study with the following reasons, 1) It consists of similar components of the current study such as goal, objectives, and participants which are Thai teachers teaching English langauge, 2) The training aims at improving teachers knowledge and skills to use ICT for teaching, and 3) The tools used in the training is LMS. However, the training methodology used in Sudsuang Yudthana's model is needed to be adapted since the training process is completely face-to-face training. The current study aims at integrating both types of training; face-to-face training and online training to fill all the gaps of both types.

To be able to integrated the ratio of face-to-face and online training activities appropriately as well as the process of assessment and evaluation could be done effectively and appropriately, the project-based learning (PBL) will be presented and discussed in the next section.

Learning Theory

Learning theory learning theory is a mathematical field related to the analysis of machine learning algorithms. Learning theorist proposed 3 main learning theories; they are behaviorism, cognitive, and constructivism. In order to create a curriculum for a blended training appropriately, constructivism will be discussed to enhance blended training.

Constructivists engaged students in meaningful experiences and emphasize active problem solving. They view learning as an activity in context. Skinner (1979) mentioned that learning involved activity and context, including the availability of information in some content domain. A constructivist activity placed the emphasis on the information processing to make the learners facilitate their thinking by using the knowledge they learned, rather than focus on providing instruction directly.

Constructivism isn't new; John Dewey advocated it at the turn of the century. Maria Montessori based her educational model on constructivism as did Joseph Bruner, and more recently, Vygotskya (referred by Collins, 1991). Constructivism as a theory of learning is juxtaposed to behavioral theory. Constructivism is child-centered; it "proposes that learning environments should support multiple perspectives or interpretations of reality, knowledge construction, context-rich, experience-based activities" (Jonassen, 1991, p. 28).

Constructivism focuses on knowledge construction, not knowledge reproduction. The constructivists argue that the 'systematic' process offered by instructionists is a problem. According to constructivists, there is nothing systematic about how we learn or construct knowledge. Rather, constructivists believe that knowledge is constructed socially using language (Vygotsky, 1962) and everyone has different social experiences resulting in multiple realities (Jonassen, 1993). Constructing knowledge, then, is a socio-linguistic process where there is gradual advancement of understandings built upon previous knowledge resulting in multiple dimensions of the truth (Sprio, Feltovich, Jacobson, and Coulson, 1991).

To conduct the professional development that meets the teachers need and be practical, situated learning is needed to be considered. This will be presented and discussed next section.

1. Situated Learning

Situated learning is less a new theory or model of learning or instruction than it is a new perspective on the process of learning. It is learning theory which center on a topic of direct interest to the adult learner and which are based on a situational context that these students might actually encounter can be effective in this unique setting. Situated learning does not argue, as its detractors fear, that formal education be abolished and replaced by apprenticeships (Carr, Jonassen, Litzinger, Marra. 1998; Carton n.d.). Situated learning emphasizes the idea that much of what is learned is specific to the situation in which it is learned (Lave, 1988; Lave and Wenger, 1991; Greeno, Smith, and Moore, 1992). Situated Learning was considered as an approach for language teacher professional development. It is discussed as learning to combine expert and craft knowledge occurs in the authentic context in which the knowledge is actually of use (Feiman-Nemserand Remillard 1995; Lave and Wenger

1991; Lemke 1997). In order to be able to take the theory of situated learning into account for the professional development preparation appropriately, some beliefs its effectiveness, and some guideline and suggestions are studied and discussed as follow,

2. Beliefs about situated learning.

Situated learning beliefs can affect the consideration of adapting the learning theory appropriately. Situated learning theorists hold several beliefs about learning and knowledge building, the following assumptions are central to the arguments they make.

2.1 Knowledge is a product of activity, not a process of acquisition: meaning results from cognitive and social activity that is intended to fulfill a purpose.

2.2 Learning is a process of enculturation in a community of practice: the more you learn something in a community, the more valuable you are to that community of practice (Lave, 1991).

2.3 Learning is developing an identity as a member of a community of practice: Becoming knowledgeable and skillful are part of the same process; each strengthens the individual's identity as a member of the community (Lave and Wenger, 1991)

2.4 Meaning is socially constructed through negotiations: members of any practice community negotiate meaning and construct understanding in the culture, using a cultural accepted lexicon. Learning in any culture is advanced through collaborative social interaction (Brown and Duguid, 1994).

2.5 Learning in situation engages different socio-cognitive processes than learning in schools: when faced with emergent problems, normal people in the real world act on situations in different ways than formal learners.

Beside the beliefs about Situated Learning, the multicultural learning situation for adult learning is needed to be considered to ensure to succeed the goal of the training. This will be discussed next section.

3. The Multicultural Learning Situation for Adult Learning

Many educators suggested the assumptions for multicultural learning situation for adult learning as follow (Casses, 1982; Condon and Yousef, 1983; Moran, 1983; Oshima and Hougue, 1983; Hoopes, 1979; Lewis, 1975; Kohls, 1981; Hall, 1959; Harris and Moran, 1983; Stewart, 1981),

3.1 Age

Condon and Yousef (1983) stated that American culture does not place as much emphasis on age in adult learning setting as do other cultures. Experience is considered more important for the learner in contributing to group discussion, and individuals related to each other in terms of their knowledge and experience without particular regard to age. Many cultures, particularly in Africa and Japan, place a great deal of value on the individual with respect to age. In these cultures, life is considered to "season" the individual with a variety of experiences. The older the person, the more respect that person receives with the community. Consequently, young people will not oppose the opinion of the elderly, no matter what group setting or situation (Harris and Moran, 1983). According to mentioned information, group interaction may be deferred to individual according to age, with the little importance given to the younger member involvement.

3.2 Gender

According to some studies of the gender factor affecting the adult training (Oshima and Hougue, 1983; Condon and Yousef ,1983), women are more free to assert themselves and to assume roles which have traditionally been barred to them. This has resulted, among other factors, in their taking a more active part in group interaction, resulting in greater utilization of their talents and experiences in American learning setting. Other cultures, particularly less technological, more traditional societies, have not recognized the role of women and are still predominantly male oriented. Women's role in these societies is submissive, resulting in deferring to males, especially where group interaction is involved. Male from predominantly, male-oriented societies will be more outspoken and less tolerant of women's participation. Women from traditionally male-dominant societies will be more passive in group interaction.

3.3 Formality

Formality in culture deals with conduct and decorum in human interaction. Formality is an important element in many societies. Politeness and deference to people in positions of authority are important in social interaction. In these situations a person knows his "place" and can derive comfort from the fact that actions are expected and performed without ambiguity. Harmony is maintained

without any awkward or embarrassing encounters. Authority figures such as the group facilitator or a member of the group who happen to be a professional in another role might be viewed as controlling the group's purpose (Condon and Yousef,1983).

3.4 Communication Style

Communicative style includes verbal and nonverbal communication (Hooper, 1979) Verbal communication includes grammar, syntax, and vocabulary, as well as the use of idiomatic expressions and figurative language. None verbal communication encompass body motion-gesture, facial expression, movements, posture; paralanguage-voice qualities, laughing, yawning, grunting, silence, physical space, skin sensitivity-stroking, hitting, greeting and farewell, and artifacts-perfumes, cloths, cosmetic (Lewis, 1975). Mehrabian (1968) study the communicative styles and she reported that 45% of our communication is verbal and 55% is non-verbal. Communicative styles will vary according the different societies, but verbal communication might be indirect, formal, and vague. Normal body space while speaking may be much closer, and normal nonverbal response might include little or no eye contact and body posture which we would interpret as offensive and unreceptive.

3.5 Learning process

Different cultures emphasize various approaches to thinking and learning. Analysis and conceptualization is favored in some cultures, while other cultures stress rote memorization such as part of Africa and in India (Harris and Moran, 1983). Organization of thoughts to draw conclusions may be quite direct as in American culture; other cultures may stress circular reasoning and an indirect approach to arriving conclusions. People from various cultures are probably accustomed to different learning styles when engaged in a group learning situation (Stewart,1981).

Explorer Adult Learning (2009) suggested some factors affecting adult training. They were described below.

1. Personal advancement - this is the most common reason given for adults who want to learn. It can encompass the opportunity to gain promotion in their current workplace and, therefore, to increase their income. It can facilitate a career change or they may be motivated by keeping ahead of competitors by taking a

particular course. And, if they're out of work, it can often provide the stepping stone to getting back on the job ladder

2. Self-improvement - learning will increase their knowledge which, for many, will also improve their self-confidence. Their self-esteem will go up as a result of proving their abilities in completing a course successfully

3. Stimulation and escape - learning in itself is an opportunity to break free from any rut they might have found themselves in. They may have become bored with their current routine, either within their personal or professional life (or both), and learning will often be the kick-start they've been looking for to motivate themselves again and can also offer an 'escape' from the daily humdrum which they might feel they're experiencing

4. Increasing their social relationships - whether they have a number of good, loyal friends or they feel they've become a bit isolated, many adults choose to return to learn as it will widen their social network in terms of creating new, additional friendships or will offer them the possibility of making new friends with whom they might share some common ground

5. External influences - sometimes they'll find adults who would not otherwise necessarily choose to return to learn but are doing so as it's expected of them by others. By this, it means that it could be their employer who requires them to go on a course or, in some cases, if they've been unemployed for quite some time, it may be that they're asked to choose a course of learning in order to remain eligible to continue to receive state benefits

6. Cognitive interest - many adults choose to return to learn simply because they have an enquiring mind and a mental 'thirst' to absorb more knowledge about a particular subject they are interest in. This would also include people who wish to pursue a particular hobby but need to understand more about it first and also those who may have undergone lifestyle changes. A good example here would be retirees who are looking for something to fill their time in order to make their lives more meaningful.

All the information discussed above will be considered intensively in terms of factors affecting the effective professional development to support various kinds of learners. Besides, the effectiveness of the situated learning is needed to be

considered to ensure to succeed the goal of the training. This will be discussed in the next section.

4. Situated Learning Effectiveness

The effectiveness and feedback of the implementation of situated leaning theory can be discussed to ensure the effectiveness of the professional development. Some educators reported some effectiveness and feedback toward the theory as follow (Anderson, Reder, and Simon, 1996),

4.1 Learning need not be bound to specific situation of its application. Instruction can often generalize from the classroom to "real world" situations.

4.2 Knowledge can be transferred between different sorts of task.

4.3 Abstract instruction can be very effective and one need not teach everything in concrete, almost vocational setting.

4.4 Instruction need not take place only in complex social situations. There is great value as well in instruction that focuses on parts of a competence and learning that occurs individually.

4.5 Providing readers with options to interact overtly with the text would encourage more active processing of the text.

4.6 Individual versus social unit of analysis is a key distinction between cognition and situative perspective.

4.7 According to the effectiveness mentioned above, they can be the valuable supports to ensure the effective training in this study. There are some guidelines provided for appropriate situated learning and it will be discussed in the next section.

5. Guidelines for integrating of situated learning into professional development

According to the beliefs and effectiveness mentioned above, Carton (1981) provided some basic guidelines for the creation and implementation of such modules as follow,

5.1 Vocabulary and structures to be presented in any lesson should be strictly limited in terms of quantity, range, and complexity. This practice will permit student mastery within the time restriction of the unit.

5.2 The learning modules should always be self-contained, essentially all linguistic structures and vocabulary necessary for the successful functioning of a specific unit should be presented during the particular class period in which the module is to be used.

5.3 Each unit should contain numerous sentences of a truly multi-functional nature, such sentences lend themselves to use in any of a number of real-life contexts in addition to the specific one at hand.

5.4 All phases to be included should be scrutinized carefully to insure that they are straightforward, practical, and current in terminology.

5.5 All vocabulary and structures to be included in the module should be presented in a form that students can utilize instantly.

5.6 In developing vocabulary for these units, the level and learning abilities of the particular audience in question must be considered. Not every group of or even every student in given group can effectively master the same amount of material.

5.7 The chosen sentences can be made readily accessible to students be presentation to categorized formats.

According the all the theories and information mentioned above, the professional development will be developed with the intensive considering on these theories.

In order to get the appropriate professional development, the curriculum development and all related theories will be discussed in the next section and all the mentioned theories were taken into account.

Project-Based Learning

Project-based learning(PBL) is sometimes called problem-based learning, and vice versa. The problem-based learning focuses on a specific problem to be addressed while project-based learning constitutes a broader category of instruction than problem-based learning. The project-based may address a specific problem, it can also focused on arears that are not problems. Project learning, also known as a dynamic approach to teaching in which students explore real-world problems and challenges,

simultaneously developing cross-curriculum skills while working in small collaborative groups.

1. Characteristics of project-based learning

In research conducted by the AutoDesk Foundation (2007), teachers from seventeen schools agreed that PBL exhibited similar characteristics:

1. Students make decisions within a prescribed framework.
2. There's a problem or challenge without a predetermined solution.
3. Students design the process for reaching a solution.
4. Students are responsible for accessing and managing the information they gather.
5. Evaluation takes place continuously.
6. Students regularly reflect on what they're doing.
7. A final product (not necessarily material) is produced and is evaluated for quality.
8. The classroom has an atmosphere that tolerates error and change.

Generally speaking, students engaged in a project,

1. have sChoome choice in deciding what they will work on.
2. plan their own project.
3. participate in defining criteria and rubrics to assess their project.
4. solve problems they encounter while working on their project.
5. make some sort of presentation of their project.

2. Point of View on PBL

Moursund (2009) analyzed PBL and classified into two different points of views, 1) a student's point of view, and 2) a teacher's point of view. He discussed briefly as shown below.

1. A Student's Point of View
   - 1.1 Learner Centered, Instrunscall Motivating
   - 1.2 Collaboration and Cooperative Learning
   - 1.3 Incremental and Continual Improvement
   - 1.4 Actively Engaged Students
   - 1.5 Product, Presentation, or Performance
   - 1.6 Challaneging, with a Focus on Higher-Oder skills

2. A Teacher's Point of View

2.1 Authentic Content and Purpose

2.2 Authentic Assessment

2.3 Teacher Facilitated

2.4 Explicit Educational Goal

2.5 Rooted in Constructivism, but Uses Multiple Methods of Instruction

2.6 Facilitates Transfer of Learning

2.7 Teacher as Learner

3. Reasons for Using PBL

A large number of teachers reported the result of using PBL for their teaching and giving their perceptions of how successful those projects have been (Moursund, 2009). All the benefits include the following:

1. Increased motivation
2. Increased problem-solving ability
3. Improved library research skills
4. Increased collaboration
5. Increased resource-management skills

4. Elements of the PBL

The Buck Institute for Education (BIE, 2011) provided the core idea of project-based learning is real-world problems that capture students' interest and provoke serious thinking as the students acquire and apply new knowledge in a problem-solving context. The teacher plays the role of facilitator, working with students to frame worthwhile questions, structuring meaningful tasks, coaching both knowledge development and social skills, and carefully assessing what students have learned from the experience. Advocates assert that project-based learning helps prepare students for the thinking and collaboration skills required in the workplace. Therefore, the PBL

1. is organized around an open-ended Driving Question or Challenge. These focus students' work and deepen their learning by centering on significant issues, debates, questions and/or problems.

2. creates a need to know essential content and skills. Typical projects (and most instruction) begin by presenting students with knowledge and concepts and

then, once learned, give them the opportunity to apply them. PBL begins with the vision of an end product or presentation which requires learning specific knowledge and concepts, thus creating a context and reason to learn and understand the information and concepts.

3. requires inquiry to learn and/or create something new. Not all learning has to be based on inquiry, but some should. And this inquiry should lead students to construct something new - an idea, an interpretation, a new way of displaying what they have learned.

4. requires critical thinking, problem solving, collaboration, and various forms of communication. Students need to do much more than remember information—they need to use higher-order thinking skills. They also have to learn to work as a team and contribute to a group effort. They must listen to others and make their own ideas clear when speaking, be able to read a variety of material, write or otherwise express themselves in various modes, and make effective presentations. These skills, competencies and habits of mind are often known as "21st Century Skills

5. allows some degree of student voice and choice. Students learn to work independently and take responsibility when they are asked to make choices. The opportunity to make choices, and to express their learning in their own voice, also helps to increase students' educational engagement.

6. incorporates feedback and revision. Students use peer critique to improve their work to create higher quality products.

7. results in a publicly presented product or performance. What you know is demonstrated by what you do, and what you do must be open to public scrutiny and critique.

5. Criteria for PBL

Kraft (2007) stated criteria for Authentic Project-Based Learning that students today are using online resources to create research reports. They are designing, critiquing, and presenting products using interactive technologies. Here are some guidelines and criteria for evaluating the effectiveness of problem and project-based learning in classroom.

1. It should be allowing for the variety of learning styles

2. It should be "real" world oriented - learning has value beyond the demonstrated competence of the learner

3. It should be a risk-free environment.

4. It should provide positive feedback.

5. It should allow choices for learners.

6. It should encourage the use of higher order thinking skills and learning concepts as well as basic facts.

7. It should utilize hands-on approaches.

8. It should provide the information in depth understanding.

9. It should be accessible for all learners.

10. It should utilize various modes of communication.

11. It should consist of the assessment that is congruent with instruction, i.e. performance-based.

12. It should be focusing that learners are responsible for their own learning.

13. It should allow learners to have ownership of their learning within the curriculum.

14. It should enhance the projects that promote meaningful learning, connecting new learning to students' past performances.

15. It should allow learners utilize real time data - investigating data and drawing conclusions.

16. It should provide the learning process that is valued as well as the learning project.

17. It should provide the learning cuts across curricular areas - multidisciplinary in nature.

18. It should focusing on teacher as a facilitator of learning.

19. It should encourage student self-assessment of learning.

The project-based learning is considered as an appropriate teaching tool for the current study and will be taken into the account appropriately.

According to the literature, the researcher needs to know 1) if the curriculum for ICT professional development for English language teachers training

developed by the researcher effective to help teachers to think they can use ICT to solve the problems in classroom, 2) if teachers integrate ICT into their English language teaching after attending the training, how much they do and why, and 3) the teachers' opinions towards the integration of ICT into language teaching after they were trained. Therefore, to find out the answers, the researcher asked some questions and conducted the professional development based on the literature reviewed on situated learning, the multicultural learning situation for adult learning, teacher needs assessment, learning theory and curriculum development, blended learning, and instructional design. In part regarding situated learning, believes that 1) the knowledge is a product of activity, not a process of acquisition, 2) learning is a process of enculturation in a community of practice, and 3) meaning is socially constructed through negotiations were taken into account. Moreover, the guidelines for integrating of situated learning into professional development were adopted to the curriculum development. In part regarding the multicultural learning situation for adult learning, learning process was considered for designing the training activities. In part regarding teacher needs assessment, all five approaches, pulling together existing data, conducting a survey, using observation and advisors, conducting interviews and studying strategies were considered and taken into account. In part regarding learning theory and curriculum development, constructivism theory would be considered to support designing all the components in the curriculum. In part regarding blended learning, all three models, skill-driven model, behavior-driven model, and competency-driven model were considered and adapted to more advanced ICT applications. Moreover, blended learning framework was considered to provide appropriate supports for trainees. In part regarding instructional design, ADDIE models and ARCS Model for motivation were taken into account to prepare the training appropriately to the target sample. The final part is the project-based learning is one of the most important part to help designing the lessons, activities and tasks for all the learners appropriately.

Summary

In conclusion, this chapter presented the review of the related literature including communication technology, information and communication technology for education, information and communication technology for English language teaching, professional development, types of training; teacher needs assessment, learning theory, situated learning, curriculum development, instructional design, and project-based learning. According to all the elements mentioned above, in this study, the literature suggested that blended learning model based on learning theories used for conducting the teacher training for English teacher to integrate ICT into their teaching might be effective. The teacher training should be based on being practical or authentic and meets their needs.