

E-Learning for Teachers:  
Conceptual Consideration and Implementation Possibility

Siti Juliaha

Universitas Terbuka, Indonesia

### Abstract

The advance of information and communication technology (ICT) makes teachers have opportunities to bring about their self-development and to enhance the quality of their instruction at the same time without having to leave their daily teaching duty. E-learning is one kind of ICT implementation in learning process that can contribute to efforts in increasing the quality of instructional process since the instruction using internet will encourage the growth of skills in learning how to learn, higher order thinking skills, oral and written communication skills, abilities in finding various learning resources, as well as increase students being active and social skills. As its difference in instruction, the implementation of e-learning in the learning process still encounters obstacles. This article will explore the effort of dissemination that should be conducted in order to make the implementation of e-learning in the instructional process can be accepted and effectively conducted. The implementation of e-learning in instruction depends on its benefit and its ease in applying in terms of efforts or obstacles encountered. In order to make effective implementation of e-learning, there is a need of the planning of implementation, including a study of new program, identification of resources, role definition, professional development, timelines, communication systems, dan monitoring the implementation

**Keywords:** e-learning, information and communication technology

### E-Learning for Teachers:

#### Conceptual Consideration and Implementation Possibility

Educators, including teachers, should meet a required academic qualification and competences as a learning agent. As a learning agent, teachers should have pedagogical, personality, professional, and social competences (Regulation of Republic of Indonesia No. 19/2005 on Standard for National Education). Pedagogical competence is the ability to manage learning for actualizing learners' various potential. Personality competence refers to teacher's personality such as steady, stable, mature, wise, and authority, become role models for students, as well as noble. Professional competence refers to master learning materials widely and deeply so that enable teachers to guide learners in fulfilling learning objectives. Social competence are all teachers' abilities as a part of the community to effectively communicate and associate with students, colleagues, staff, parents, and communities. These competencies should be continuously developed. To that end, each teacher required to take advantage of every learning opportunity to improve their professionalism.

Advances in science and technology, especially information and communication technology is so rapidly. This progress has obviously affected the various fields, including education. With the rapid advancement of information and communication technology, teachers are demanded to utilize information and communication technologies to communicate and develop themselves. With using

information and communication technology, teachers can develop themselves without leaving the daily teaching duties. In addition, through the use of information and communication technology, teachers can also improve the quality of instruction.

E-learning is a form of information and communication technology utilization in instructional process. Teachers as reformer agents are required to implement e-learning in teaching, either for themselves or for using by their students. E-learning provides access to anyone to obtain comprehensive information by utilizing the world wide web (www). Anyone can obtain information they want wherever and whenever they want it (to give what people want, where they want it, and when they want it - www). Accordingly, to increase the teachers' professionalism, e-learning provides learning resources that are not limited to increase the quality of the learning process.

As distinct from the appropriate learning activities that teachers do, the application of e-learning in the instructional process still experiences problems. This article discusses the dissemination efforts should be done in order to attempt the implementation of e-learning in instructional process can be accepted and implemented effectively by the teacher. The discussion on the implementation of e-learning in instructional process is begun with an explanation of the need for the implementation of e-learning in instructional process. Then, followed by a discussion of the individual' factors affecting the implementation of e-learning in instructional process and efforts should be made in the dissemination of e-learning application.

### **Nature of E-Learning**

E-learning is a teaching and learning process that utilizes an electronics information package for the sake of learning and education, which is accessed by the learners, anytime and anywhere based ICT. Pannen (1999: 24) stated that e-learning refers to the learning process that occurs in the virtual classroom that are in cyberspace through the Internet network. Therefore, e-learning is also called virtual learning. The implementation of e-learning is aimed at addressing the problem of time and space separation between learners and teachers through the medium of the computer. Learners can obtain learning materials that have been designed in a learning package available in the Internet site. By implementing e-learning, learners can study the learning materials themselves or if necessary can ask for help in the form of interaction that is facilitated by the computer, such as computer-based learning or computer-assisted learning (CAL) or interactive web pages, synchronous teacher/tutor-aided learning (the same point in time) and asynchronous (in a different time points), or other resources-aided learning.

From these explanations, it can be observed that the characteristics of instruction that implements the concept of e-learning are: (1) the separation between teachers and learners, (b) learning system is open (open access and freedom of choice variety of learning resources as well as the flow of the learning process), and (c) network base. The main principle in e-learning is the authority and collaboration. Authorities in a sense, that learners have the responsibility to determine the learning

material, access to learning resources, time, media that will be used, as well as the place and study pace that will be undertaken to achieve the learning objectives.

Collaborative in a sense, that to be able to carry out these responsibilities, learners are required to interact with other learners, educators, and other available learning resources.

The implementation of e-learning in the instruction contributes to improving the quality of learning. Simonson, et al. (2003: 243) suggests some of the advantages of using the Internet in instruction as follows.

1. If access to the Internet is not a problem, learners can study anywhere in accordance with the speed of learning and owned conditions since learning materials are always available in computer networks and the Internet. By utilizing information and communication technology, access to a variety of learning resources is available more widely.
2. Learn by using information and communication technologies provides opportunities for learners to interact with each other, with tutors, and/or with learning community and learning resources. This shows that e-learning provides an opportunity for learners to conduct various interactions and collaboration with others.
3. By utilizing the Internet as a source of learning, learners not only master the information presented in a variety of learning resources in the Internet, but will also have skills in using a variety of such learning resources.

4. Learners will always get the latest information because the material presented online is easily updated and modified.
5. Internet encourages active learning and facilitates the intellectually engagement of learners with learning materials.
6. Using Asynchronous Learning Networks provides a variety of learning experiences and accommodate different learning styles of learners.
7. Economically, learners can stay at home without having to pay for transport and accommodation. In addition, learners are also able to keep working, do not have to lose their jobs. While completing the study in accordance with the speed of learning and the time owned, learners can continue performing their duties.

In addition, learning by utilizing the Internet would promote the development of learning skills (learning how to learn), the skills of reasoning (higher order thinking skills), communication skills (oral and written), the ability to find a variety of learning resources, as well as increase active learners and social skills (Departemen Pendidikan Nasional, 2004: 72). Anderson (2006: 222) argues that by providing opportunities for learners to interact with a variety of learning resources available through the Internet, the learners' skills in lifelong learning will increase and through online discussions, learners will master the responsible and professional communication skills.

### **Factors of E-Learning Implementation**

In connection with the use of technology in learning, Technology Acceptance Model which was first introduced by Davis et al, (Miller, Rainer, & Corley, 2003: 2) explains that the factors that predispose individuals to use technology is a benefit that will acquired and ease of use. Moreover, the research conducted by Miller, Rainer, & Corley (2003: 2) showed that the benefits and ease of use, both have a positive correlation with the amount of time learners spent in online learning.

Individuals perceive an innovation has benefits when the innovations can help them to do their jobs better. By looking at these benefits, individuals will be compelled to care about the implementation of such innovation in daily activities. Concern refers to "the composite of feeling, preoccupation, thought, and consideration given to a particular issue or task" (Hall, George & Rutherford in Schaafsma & Athanasou, 1994). With regard to the implementation of e-learning in instruction, concern refers to the combined feelings, engagement, thought, and consideration for someone to implement e-learning. Stages of individuals' concern include the stages of awareness (the lowest level), informational, personal, management, consequence, collaboration, and refocusing (the highest level) (Rakes & Casey, 2002; Schaafsma & Athanasou, 1994).

- a. Awareness stage is indicated by the individual's small attention to or concern with existing innovations. Individuals are not interested in the innovations. The

question that arises in individuals is what is the innovations. Nevertheless, the individual is aware of such innovations.

- b. Informational stage is indicated by individuals who have an awareness of the innovations and keen to learn more. Although it has only little knowledge about the innovations, individuals who are at this stage has the desire to know more about the innovations and discuss the possibility of implementing such innovations.
- c. Personal stage is shown by individuals' uncertainty to offer innovation and the inability of meeting individuals to the offer and their role in innovation.
- d. Management stage is indicated by the individual's attention to the processes and tasks in implementing innovations and the best use of information and resources available. At this stage, individual provides time to prepare for implementing innovation.
- e. Consequence stage is shown by the individual's attention that is focused on the effect of innovation on the job. Even at this stage, people try to modify innovation so as to provide a better effect.
- f. Collaboration stage is demonstrated by the presence of coordination and cooperation with others in the application of innovation.
- g. Refocusing stage is indicated by the individual efforts concentrated its efforts on exploring the benefits of innovation, including the possibility of fundamental change or looking for a better alternative. At this stage, people already have ideas

that can lead to innovation applied to provide better results. At this stage, the individual to be proactive.

Of the seven stages, it appears that to be actively involved in implementing an innovation, most individuals are required to reach the stage of Management. As a matter of fact, the concern stage required in the implementation of e-learning in instruction is the involvement at a high level, namely stages of consequence, collaboration, and refocusing. At the stage of consequence, people are already focusing on the effect of the application of e-learning in their instruction and for others. At the stage of collaboration, the individual is already focusing on the coordination and cooperation with other parties in implementing e-learning. Meanwhile, at the stage of refocusing, individual conducts exploration or investigation against further benefit from the implementation of e-learning in instruction.

Meanwhile, the ease of use of an innovation can be seen from at least the efforts made or the obstacles encountered in implementing an innovation. This relates to the user's perception of the ability itself in applying existing innovations. Concept relating to individual assessments of ability in doing something is known as self-efficacy (a sense capable of self).

Theory of Planned Behavior (TPB) states that one of the factors that affect a person in applying the technology is perceived behavioral control (Miller, Rainer, & Corley, 2003: 3). Perceived behavioral control refers to the individual's perception of

his/her ability to do something. Bandura (1997: 3) uses the term self-efficacy to explain one's judgment against his/her ability to organize and carry out an activity. Individuals who have high levels of self-efficacy will be actively involved in the implementation of these innovations because the individual has faith that he is able to do so. Even Mungaria (2003: 7) argues that one of the factors that hinder the implementation of e-learning in the instruction is self-efficacy. This means that self-efficacy may decrease the concern level and the individual's involvement in implementing e-learning.

Bandura (1997: 116) states that self-efficacy influences cognition, motivational, affective, and choice processes. The influence of self-efficacy on the process of cognition can be shown in various forms. First, the person is able to influence the formulation of personal goals. The stronger the self-efficacy, the higher the purpose and commitment to achieve it. Second, a person's belief in their own efficacy also affects the anticipation of designed scenarios. Individuals who have a high sense of self-efficacy will be able to design a successful scenario that provides positive support and assistance in dealing with something. Conversely, individuals who have a sense of low self-efficacy will describe the failure scenario and think that everything will not succeed. Third, confidence in the ability and skills to use the knowledge may be lack, pretty, or extraordinary dependent on a change in thinking about the self-efficacy.

In relation to the motivation, one's belief of self-efficacy determines the level of motivation. Self-efficacy may affect the choice of activity, effort, and perseverance. This means that the individuals' belief in their self-efficacy will determine the activities to be chosen, the intensity shown in performing these activities, and their perseverance in the face of problems. Several studies conducted by Schunk (Pintrich & Schunk, 1996: 92-93) show that, regardless of ability, students who have a high sense of self-efficacy were able to solve more problems than students who have low self-efficacy. Individuals who have high self-efficacy will show the effort and commitment because they felt they was capable of doing their tasks. Effort and commitment by individuals in applying or doing something show their high concern and involvement.

### **E-Learning Dissemination**

Currently teachers are required to be able to implement e-learning, as a form of learning innovation, both for themselves and for use by their students. With regard to the implementation of innovation, Errington (2001) stated that the users' competence or ability, the support of means, and the adequacy of infrastructure are the factors that determine the adoption of flexible learning in instruction. This is in accordance with the opinion of Bandalaria (2003) who argued that there were three main problems that hinder student participation in online learning. Firstly, dispositional problems, namely the problem referring to the students' personal, such as attitude, confidence, and learning styles. Secondly, circumstantial problems, ie problems related to specific

conditions such as geographic location, time availability, and so forth. Thirdly, technical problems, the problems that related to hardware and software programs that are used in online learning.

To anticipate emerging problems and propose alternative solutions as well as to arrange the schools to be ready to accept the proposed innovation, there is the necessary of the implentation plan of such innovations. The implementation plan includes a study of new programs, identification of resources, role description, professional development, timelines, communication systems, and monitoring of the implementation (Miller & Seller, 1985: 276). In connection with the implementation of e-learning in instruction, some things that must be prepared as follows.

1. The study of e-learning

The implementation of e-learning in the instructional process demands shifts of the learning paradigm. If formerly the instruction was teacher-oriented, then it needs to be changed into students-oriented. Based on the Theory of Planned Behavior, teachers will be willing to implement e-learning in the instruction if they feel that they have the ability to carry it out. In connection with that, the first thing that needs attention is to equip teachers with the knowledge and skills necessary to implement e-learning in instruction. On this occasion, teachers are given the opportunity to examine the concept and potential of e-learning as well as the preconditions that must be met for the implementation of e-learning in the instruction. By obtaining detailed information on the implementation of e-learning

in the instruction, teachers will have a degree of self-efficacy (an assessment of the capability themselves to do something) enough to feel confident that their ability to design and implement learning by applying the concept of e-learning (Mungaria, 2003).

## 2. The Identification of resources

The purpose of the identification of resources is to determine the specific needs of the implementation of new programs. The implementation of e-learning requires the availability of facilities and infrastructure. Fathurohman (2011) suggested that the facilities and infrastructure that need to be provided in the implementation of e-learning in learning are hardware, software, and internet bandwidth capacity. No availability of communications and information technology infrastructure in the schools may make e-learning not be applicable. In addition to the availability of resources, the quality of these resources should be also considered.

## 3. Roles Description

The implementation of e-learning demand a change in the operational system of work and organizational structure that is different from face-to-face learning. In learning to e-learning, design, implementation, and evaluation of learning is done by people who are different. Accordingly, the role of individual in those activities should be considered if teachers are required to implement e-learning in their class.

#### 4. Professional Development

This component is a key component in the implementation of an innovation. This is because any change requires a change in the views of each party involved in the implementation of innovation. Each party involved in the innovation should have a relatively similar understanding about the innovations that will be implemented. According Sarason (Ornstein and Hunkins, 1998: 292), one type of understanding that is very important and is the key to successful implementation of the new program is the understanding of the information relating to the new program that will be implemented. This information needs to be understood by all parties involved in the implementation of the program. Incomprehension to such information can cause people do not want to be involved in the implementation of innovations. Understanding of the information can be achieved through professional development activities.

#### 5. Schedule of Events

The provision of schedule of events makes it easy to sort the events appropriately and allows the determination of the allocation of time in accordance with the activities to be carried out. To design a schedule needs to be analyzed carefully about the new program and the individual needs to implement the program.

## 6. Communication Systems

One of the keys to successful implementation of new programs is the frequent discussions about the new program between the various parties involved with the implementation of the program. With frequent communication, individuals assigned to implement an innovation feel not isolated, but they perceive support from various parties. Planning of communication system includes the type of information needed, user of information, and the time that information is needed.

## 7. Monitoring of Implementation

This activity is conducted to gather information regarding the innovation implementation and use that information to facilitate and support the effort of innovation implementation. Essential activities that support the implementation and possible changes in the new program is decided based on the results of monitoring. The feasibility level of the new program is also known from the monitoring.

Having regard to the components must be designed before the implementation of an innovation, it can be argued that the effectiveness of the implementation of an innovation is determined by a thorough implementation plan to anticipate obstacles and the impact as well as changes that are required. In addition to other components, professional development plays an important role for the successful implementation of an innovation.

### **Conclusion**

1. Teachers are required to always take advantage of every opportunity to learn in order to enhance the insights and profesinality, including implementing the development of information and communication technology to communicate and develop themselves.
2. E-learning, as a form of learning innovations that take advantage of advances in information and communications technology, provides an opportunity for teachers to improve their knowledge and professionalism without having to leave the teaching duties. By implementing e-learning, educators gain access to the information of the learning resources that are not limited to the Internet.
3. Implementation of e-learning in the instructional process depends on the potential benefits and ease of its use. The existence of the benefit to be obtained through e-learning will encourage teachers to concern and engage in the implementation of e-learning. Meanwhile, the ease of implementation of e-learning can be seen from at least the efforts made or obstacles encountered in the implementation of e-learning. It is related to the teachers' perception of their ability (their self-efficacy) in implementing e-learning.
4. Planning of the innovation implementation should be developed to anticipate emerging problems and propose alternative solutions as well as organize schools so that they would be ready to implement the intended innovation.

5. Teachers are required to have communication skills especially in using computer and information skills that are related to e-learning, in order to be able to implement e-learning in the instructional process. Accordingly, there is a need for professional development activities for teachers to meet such demand. In addition, the adequacy of support facilities and infrastructure and changes in operational systems of work and organizational structures are necessary to achieve the successful implementation of e-learning in instruction.

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