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## Elementary School Teachers' Conception of E-learning and Blended Learning

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### Abstract

The developments of school infrastructure that provides and involves computers in learning encourage teachers to adapt the use of these advanced technologies. The intended form of adaptation is through e-learning. Questionnaires were given to 43 elementary school teachers, who were able to operate computers, randomly selected to describe e-learning concept that they understood and applied. Although the majority of them mention e-learning specifically as learning involving computers in their implementation, and assuming they have implemented e-learning, they basically apply blended learning. Computers were used as a complementary medium, not the main. Through the results of the survey conducted, we discussed a gap between the perceptions of elementary school teachers believed with the actual concept of e-learning. Through the discussion, we also obtained a picture of how the actual application of e-learning by teachers is blended learning. Suggestions on the urgency of implementing e-learning in elementary school are also included.

**Keywords:** *E-learning, blended learning, teachers' conception*

### 1. INTRODUCTION

Nowadays the use of advanced technology is increasingly known to the public. Not only in big cities, that the technology use in the form of internet carried out by almost all residents in Indonesia. Even though the majority of internet users as much as 72.41 percent come from the urban community, geographically the internet use is quite even: 57.70% on the island of Java, 19.09% on the island of Sumatra, 7.97% on the island of Kalimantan, 6.73% on the island of Sulawesi, 5.63% on the island of Bali-

Nusa, and 2.49% on the island of Maluku-Papua (Kompas, 22 February 2018). The data reported by eMarketer ([www.emarketer.com](http://www.emarketer.com)), used by KOMINFO in reporting the internet usage in Indonesia, shows a significant increase between 2013 and 2018, which makes Indonesia ranked 5th in 25 countries with users highest internet. This rating is enough to prove that most of people in Indonesia are technologically literate.

The technological literacy experienced by most people not only provides various conveniences, also

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makes a shift in the perspective of the learning process. Bishop predicted that learning future would be flexible, open, and accessible to anyone who needed it regardless of gender, age, or previous educational experience (Whitelock & Jelfs, 2003). According to Mason (2017) this type of learning will be more determined by information networks that allow interaction and collaboration, rather than school buildings. Even for children, based on research on early childhood education and ICT, it is very possible that the learning process utilizes computers as tools that help establish communication, collaboration, creativity and language development (Nikolopoulou, Gialamas, & Barriers, 2013).

In Indonesia, learning as predicted by Bishop and Mason has been practiced in universities. Generally, lectures in universities in Indonesia utilize the technology tools, both as the main media and supporting media. Open University (*Universitas Terbuka*) is an example of higher education that applies distance learning. It offers fully online lectures, without face to face interaction in class. Lecture materials, teaching materials, assignments and discussion forums are fully implemented online. The same ways are also done by other universities. However, the majority of them utilize the online system as enrichment for students, not the main system of lectures.

The learning system as implemented by higher education is known as E-Learning and Blended Learning. Both of these learning are utilizing the advanced technology (computers and internet) in the

process of implementation (Christensen, Horn, & Staker, 2013; Horn & Staker, 2011). As with other traditional learning, this learning has principles that stimulate students to achieve various changes as a result of learning. Many studies have been conducted related to e-learning. Several studies, which were found, discussed about e-learning in universities; both are in terms of students (Zhu, Valcke, Schellens, & Yifei, 2009; Zamzuri, Shahrom, Kasim, Nasir, & Mamat, 2012), to the assessment process (Rohayani, Kurniabudi, & Sharipuddi, 2015).

Many elementary Schools involve the use of advanced technology in their learning. Nowadays the school administration system has been using the online system. On the other hand, e-learning has been widely discussed and practiced. Therefore, this article aims to describe the conception of elementary school teachers' on e-learning and blended learning and how they implemented it in classroom

## **2. LITERATURE REVIEW**

### **a. E-learning**

The letter "e" in the word e-learning (electronic) shows activities related to all forms of online systems and digital devices (Hubbard, 2013). This indicates that the term e-learning is used to describe the learning process supported by computers and networks. In its development, the term e-learning is defined based on the emphasis in what has been stated. Mason and Rennie (2006) describe how the definition of e-learning experiences a different emphasis according to its focus. The e-learning definition attached to the web which has diverse focus: on

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content, communication or technology. This definition is illustrated in several lessons such as web-based learning, computer-based learning, virtual classes, and digital collaboration. Many other definitions focus more on learning locations, namely the use of technology to create, strengthen, convey and facilitate learning.

Initially, e-learning was intended as a support system for distance learning and this is why e-learning is often called distance learning (Yanuschik, Pakhomova, & Batbold, 2015). Not only about distance and time, this learning is applied with consideration of the development of science and technology, culture and equal learning opportunities, as an innovation of traditional learning (Wahyuningsih&Makmur, 2017). Based on the consideration of the emergence of e-learning, it appears that this learning contains fewer opportunities for interaction than face-to-face learning. Even though interactions remain through online networks, social interaction between students and between educators and students is different from traditional learning. This is because the focus of e-learning is on personal abilities and learning independence (Wahyuningsih&Makmur, 2017).

In its implementation, there are various e-learning models. Some of the most commonly used e-learning models include: web-based learning, blended learning, and full e-learning (Yanuschik, Pakhomova, & Batbold, 2015). In this model the position of e-learning has different functions. In general, e-learning functions in learning activities include: supplement, complement and replacement

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(Wahyuningsih&Makmur, 2017). In summary, the models and functions of e-learning are presented in the following table.

**Table1. Proportion of E-learning use based on its functions**

Use of online learning	Learning Model	Description	Function
0%	Traditional learning	Learning is given directly, face to face, not utilizing online facilities but can use computer assistance in learning.	Supplement
About 30%	Web based learning	Generally, learning is carried out face-to-face, but independent work instructions, consultation forums, formative and temporary assessments, using electronic technology are provided.	Supplement
20 – 80%	Blended learning	Learning activities and materials are conducted online and face to face interaction.	Supplement
90 – 80%	Fully online learning	Learning is fully carried out in an electronic environment, almost no face to face learning.	Substitute

**b. Blended learning**

At a glance Blended Learning implies a learning pattern that contains elements of mixing, or a combination of one pattern with another. Mosa (Whitelock&Jelfs, 2003) said that the two main elements are mixed, namely face-to-face learning in class (classroom lesson) with online learning. Traditional learning that is usually done in the classroom is combined with online learning, both independently and collaboratively, using information and communication technology infrastructure. Besides "blended learning" other terms that are often used include "blended e-learning" and "hybrid learning". Mainnen said that Blended learning has several alternative names namely mixed learning, hybrid learning, blended e-learning and melted learning (in Finnish) (Rooney, 2003). In its development, the more popular term

is blended e-learning rather than blended learning. Both terms are the latest educational issues in the development of globalization and technology.

Initially, the term blended learning was used to describe courses that tried to combine the best online learning with the best face-to-face learning. When the term becomes popular, more and more combinations are referred to as blended learning, for example: combining various technologies, various teaching methods, various learning experiences, or various locations of learning activities. In a survey conducted by Driscoll (2002), on some literature, four differences were commonly used to explain blended learning, among others Ugur&Akkoyunlu, 2011):

1. combining face-to-face learning with learning that utilizes technology;
2. combining pedagogical approaches to obtain optimal learning outcomes, either with or without

- using technology
3. combining various forms of learning technology with face to face with instructors;
  4. combining learning technology with specific tasks to create harmony between learning and work.

These differences indicate the relationship between blended learning and e-learning. The following diagram illustrates computer-based and online blended learning models.

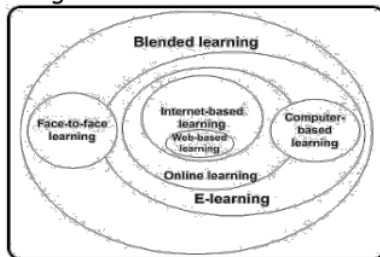


Figure 1. Diagram of blended learning

### 3. MATERIAL AND METHODOLOGY

#### a. Data

The data needed in this study were collected through questionnaire arranged by researchers and distributed online. Each respondent will fill in the name and school identity from the origin to make sure they are from elementary school. Questionnaire contains closed and open questions. Closed questions aim to: (1) map teachers who are able to operate computers and not, (2) map teachers who have and do not implement e-learning and blended learning. Open questions aim to explore the concepts of elearning and blended learning that teachers know and what obstacles ~~hinder them in applying the two~~

learning. The results of filling out the questionnaire are then described based on the classification made by referring to the concept of e-learning and blended learning that the teacher delivered. By eliminating respondents who were unable to operate computers, 43 respondents gave their descriptions of e-learning and blended learning.

#### b. Method

Respondents in this study answered questions according to the actual situation they experienced. The data obtained will be presented descriptively according to the objectives in this study.

### 4. RESULTS

Questionnaires distributed online received responses from 43 elementary school teachers, consist of 30 women and 13 men between 30-45 years old and come from diverse schools, who were able to operate computer. Among the respondents, computer application programs that are mastered include: Microsoft office (word, excel, and power point), applications for surfing in cyberspace, Geogebra and audio and video playback applications. Even though all respondents were able to operate computers, there were 20% (8 people) of the total respondents who had never used computers as learning media. As many as 80% of respondents (35 people) have used computer application programs in learning, including: Microsoft Power Point, Microsoft Word, Microsoft Excel, Paint, Pinnacle, Geogebra, browsers, and audio and video playback applications. In addition, they also take advantage of the Android application on the cellphone when

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playing video or audio as a learning medium. Other media used in learning are objects from the surrounding environment, images, learning KITS, miniatures, and learning media created by themselves.

After questions about the ability to operate computers, respondents were asked about e-learning. As many as 20% of the total respondents said they did not know what e-learning was. The other eighty percent know what e-learning is and provide an overview of e-learning based on their understanding. After classification, there are three forms of explanation about e-learning based on their knowledge, namely: (1) IT-based learning, using advanced technology to make it easier for students to understand the subject matter; (2) distance learning where teachers and students do not face to face, learning is done using an online system; (3) learning that uses electronic media and usually occurs in ICT learning.

The explanation of e-learning presented did not show that all respondents felt they had applied e-learning. When asked about whether to ever apply e-learning in class, as many as 57.4% of the total respondents claimed they had never applied e-learning, while 42.6% had applied e-learning. Respondents who have applied e-learning in class explain the forms of e-learning they do, including:

1. using phenomena reported on television, e-books, news on the internet as subject matter

material;

2. online examinations and learning are done by utilizing cell phones;
3. utilizing edmodo or e-lab in learning;
4. delivery of subject matter is carried out through image display, video and film screenings and utilizing the power point program, while also utilizing the internet in showing objects that are being discussed;
5. tasks assigned to students must be collected online, by sending them via e-mail, social media accounts, or uploading them to youtube.

Respondents who have applied e-learning were also asked about obstacles and solutions when implementing e-learning. Obstacles encountered when implementing e-learning involve infrastructure. Respondents mentioned several obstacles in implementing e-learning, among others: poor internet network quality and limited quota, the absence of computer experts who could deal with damage to devices or networks in schools, the limited number of computer units owned by schools so that they had to use teachers' private facilities, the occurrence of power outages, and not all students have the facility to implement e-learning at home. Faced with the obstacles encountered, the solutions taken by respondents included moving learning to a room that had adequate facilities, using other media, alternating with other teachers, and designing learning in groups so that they could use computer units together. Respondents were also asked about blended learning. Among 43 respondents as many as 56.6% said they did not know about blended learning, while 43.4% knew about blended learning. Respondents who

know about blended learning provide an explanation of blended learning based on their understanding. Explanations of blended learning provided by respondents include: (1) learning methods that combine face-to-face learning with online learning; (2) mixed learning between e-learning and other learning; (3) learning that combines various learning methods and techniques.

Respondents who gave explanations about blended learning were then asked whether they had implemented blended learning in class. As many as 85.7% said they had never implemented blended learning in class, while 14.3% said they had never. The form of blended learning that is applied in the classroom includes: using video media which is equipped with worksheets that are filled manually, using edmodo which is combined with direct learning, using manual teaching materials combined with computers, and combining lecture learning and discussion methods. In its application, the obstacles and solutions that teachers encounter are not much different from e-learning. Obstacles encountered related to infrastructure facilities and the solution taken is by not implementing blended learning, simply by using media in the surrounding environment.

## **5. DISCUSSION**

The explanation of e-learning provided by the respondents shows that basically they capture the purpose of e-learning defined by researchers. The involvement of technological devices in learning, whether they are used as learning media or the main means of

learning, is referred to as e-learning according to the respondents. Some respondents who understand e-learning only as distance learning, where all learning activities are delivered through online, consider the learning activities they do when involving computer-aided media is not e-learning.

Some researchers define e-learning as learning that involves technological devices, both computers or mobile devices, in conveying and or supporting learning (Clark & Mayer, 2011; Ong, Lai, & Wang, 2014). Also mentioned are some of the most commonly applied e-learning models along with e-learning functions in the learning. Referring to this opinion, the concept of e-learning delivered by elementary school teachers who became respondents in this study is in line with the concept of e-learning described by many researchers.

The concept of respondents about e-learning can also be seen in the form of learning that they apply in class, which they call e-learning. Various forms of learning mentioned by respondents, as explained in the sub-results, show that they use electronic devices only as learning support media. This shows that the e-learning function in learning is only as a complement. Although some respondents mentioned the use of the Edmodo application, which can be used for online learning, its use is not a major activity in learning. The application is used as a complement. One form of e-learning mentioned by respondents, which is not included in the concept of e-learning, is the use of television, ebook, and internet media in preparing learning materials. Even though it involves electronic devices,



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the device is not used as a medium that supports learning or learning facilities. Thus, the learning carried out includes traditional learning.

The form of e-learning described by respondents basically leads to a blended learning model. As mentioned in the discussion at the beginning that blended learning emphasizes the combination of approaches in learning, both between face-to-face learning and online as well as various pedagogical approaches with or without electronic media. The explanation of respondents about blended learning is basically in accordance with the definition of researchers about blended learning. The form of blended learning they mentioned is also similar to the form of e-learning that they apply in class. Explanation of respondents shows that they consider blended learning different from e-learning. In fact, referring to the sources described in the literature review blended learning is one of the most commonly used models of e-learning. Based on the form of learning delivered by respondents in the questionnaire given shows that the learning commonly applied by respondents is basically blended learning.

The obstacles presented by respondents in implementing e-learning and blended learning indicate that this learning requires certain conditions. These obstacles can become obstacles to the possibility of this learning being applied. Inadequate infrastructure for implementing e-learning with other models, is one reason why learning that is commonly applied by teachers is a blended learning

model, even though it also uses online learning applications.

In addition to infrastructure, there are other factors that support the readiness to implement e-learning. In the literature study conducted by Rohayani, Kurniabudi, and Sharipuddin (2015) it is stated that the factors that support readiness in implementing e-learning include: policy, knowledge, skills, attitude, motivation, habits, financial, experience, culture and content. The factors mentioned are used to measure the readiness for the application of e-learning in higher education. However, this size could be a consideration if you will apply e-learning in elementary school, with a model other than blended learning.

In addition to e-learning readiness factors, other considerations that need to be considered in implementing e-learning (online learning, web based learning, etc) are weaknesses contained in the learning. Of the several weaknesses of e-learning mentioned (Lehmann & Chamberlin, 2009; Husamah, 2013; Staker & Horn, 2012; Wahyuningsih & Makmur, 2017), the reduced interaction between teacher and student is one thing that needs attention. Interaction that decreases in intensity will slow down the formation of values in the teaching and learning process. This condition certainly needs to be a major consideration in implementing e-learning.

## **6. CONCLUSION**

The response provided shows that the teachers basically know e-learning and blended learning even though they do not show that blended learning is one of the models in e-learning. Obstacles and solutions given related to e-learning and blended learning also

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show that respondents basically know the basic needs to apply both learning. He mentioned the form of learning that has been applied in relation to e-learning indicates that e-learning, with a blended learning model, is not something strange to teachers. Therefore, research that can be done later is the development of other models in e-learning in elementary schools.

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