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Research paper

An Analysis of Readiness Factors of GOES (Guide Objective Eementary School) Mobile Learning in Elementary School

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Abstract

This study proposes a determination of readiness factors in elementary school to accept the application of GOES mobile learning in the process of Teaching and Learning Activities. The other is to find out what factors are considered sufficient to help the implementations. This research is descriptive research whom using a questionnaire media based on Aydin & Tasci's e-learning readiness (ELR) model with a rating scale. This questionnaire consists of 25 questions and will be grouped into four factors. These factors are technological factors, innovation factors, human resources factors, and self-development factors. The type of data in this study is the quantitative type. The study locations were in Elementary School of 15, 19, 20, 21, and 22 in DKI Jakarta with only 75 questionnaires from 180 questionnaires distributed. The results of the questionnaire for Elementary School of 15 showed an ELR score of 4.04 which means the school is ready to implement e-learning, while for Elementary School of 19 showed an ELR score of 3.89, Elementary School of 20 showed an ELR score of 3.91, Elementary School of 21 showed an ELR score of 3.86 and Elementary School of 22 showed an ELR score of 3.83 which means in the ready category but needs a few improvement..

Keywords: *Readiness Factors, GOES, elementary School.*

1. Introduction

GOES *m-learning* is an interactive learning system that involves interaction between teachers, students, and parents. Applications that rely on the Android operating system are intended to facilitate teaching and learning activities. This application offers a learning system that utilizes information technology, so teaching and learning activities can be done anytime and anywhere. However, learning by utilizing information technology cannot immediately be used directly because the achievement of educational goals depends by the learning process experienced by students. One of the most influential psychological factors is the readiness of students in learning activities[1].

Research of readiness factors for the application of GOES m-learning needs to be because that the results of research can be taken into consideration for schools that implement m-learning. These considerations are intended so that the utilization of m-learning can be carefully designed. If it is not carefully designed, the use of m-learning can be detrimental to schools, teachers and students who use it. Some factors that can be used as a benchmark for the readiness of the implementation of m-learning are technological factors, material factors, human resources (HR) factors, and innovation factors from Aydin & Tasci's research model[2]. By knowing the level of readiness of these factors, the system provider can determine the policy or strategy that will be used and find out other factors that become obstacles.

The use of m-learning has been widely applied in public and private schools. The application of m-learning is mostly at the level of junior high school to university, so the application at the elementary school level is still very small. Public elementary schools in Jakarta are considered to have quality human resources facilities and have good accreditation values. From these considerations, the elementary school of 15, 19, 20, 21 and 22 in Jakarta were chosen.

This study proposes a determination of readiness factors in elementary school to accept the application of GOES mobile learning in the process of Teaching and Learning Activities. The other is to find out what factors are considered sufficient to help the implementations.

2. Literature Review

2.1. E-Learning

E-learning is a form of learning model that is facilitated and supported by the use of information and communication technology[3]. E-learning has characteristics, among others [4]:

- Having content relevant to learning objectives;
- Using instructional methods, for example presenting examples and exercises to improve learning;
- Using media elements such as words and pictures to convey the learning material;
- Allows direct learning to be centered on the instructor (synchronous e-learning) or designed for independent learning (asynchronous e-learning);
- Build understanding and skills related to learning objectives either individually or improve group learning performance.

Rusman et al[5], e-learning has characteristic including :

- Interactivity;
- Independence;
- Accessibility;

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- Enrichment;

A learning system based on formalized teaching but with the help of electronic resources is known as E-learning. While teaching can be based in or out of the classrooms, the use of computers and the Internet forms the major component of E-learning. E-learning can also be termed as a network-enabled transfer of skills and knowledge, and the delivery of education is made to a large number of recipients at the same or different times[6].

2.2. E-Learning Readiness (ELR)

E-Learning Readiness (ELR) is defined as a physical readiness of an organization for a learning experience[7]. The ELR model is designed to simplify the process of obtaining basic information needed to develop e-Learning[8].

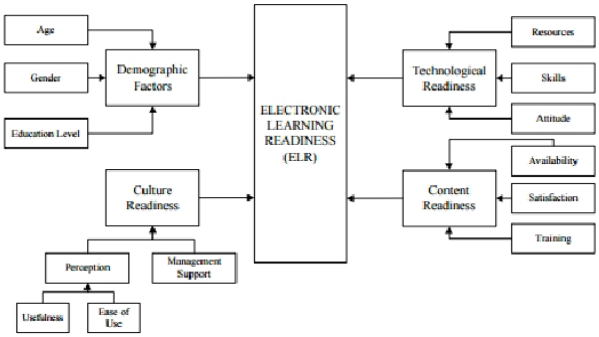


Fig. 1. *E-learning Readiness* Model

One model for evaluating e-learning readiness for developing countries is the model of Aydin & Tasci [9]. Aydin & Tasci developed the ELR model with four factors capable of measuring e-learning readiness. These factors are as follows :

- Technological factors

This factor considers ways to streamline the adaptation of technological innovation, namely e-learning in a school or organization.

- Innovation factors

This factor considers the experience of human resources in schools or organizations in adopting a new innovation, e-learning.

- Human resources factors

This factor considers the characteristics of human resources in schools or organizations.

- Self-development factors

This factor considers the trust of schools and organizations towards self-development in the application of e-learning.

2.3. Android

According to Arifianto[10], Android is a mobile device on the operating system for Linux-based cellular phones. Android has the following four characteristics:

- Openness

Android is built to be truly open, so that an application can call one of the core functions of a cell phone such as making calls, sending text messages, using cameras and others. Android is a virtual machine specifically designed to optimize the memory and hardware resources contained in the device. Android is an open source that can be freely expanded to include new technologies that are more advanced when these technologies emerge. This platform will continue to grow to build innovative mobile applications.

- All applications are made the same

Android does not make a difference to the main applications of telephone and third-party applications (third-party applications). All applications can be built to have equal access to the ability of a telephone to provide broad services and applications to users.

- Solve obstacles to applications

Android breaks down barriers to building new and innovative applications. For example, developers can combine information obtained from the web with data on one's cellphone such as user contacts, calendar or geographical location.

- Fast and easy application development

Android provides very broad access to users to use applications that are getting better. Android has a set of tools that can be used to help developers improve productivity when building applications. (Source: http: //www.android.com.about/).

2.4. The Questionnaire

The questionnaire is a set of written questions and usually involves many people. Questionnaires can be done in writing (paper-based) or electronically. Usually, the sample is chosen to represent a particular population. After the results of the questionnaire are obtained, an analysis is needed to retrieve data that is suitable for the needs of gathering needs.

The following are the stages of collecting the questionnaire :

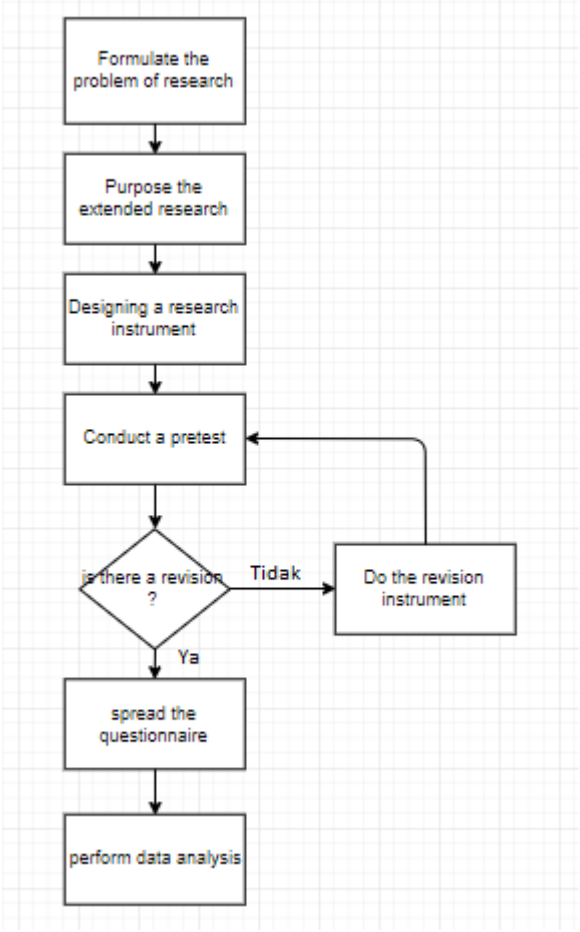


Fig. 2. The stage of collecting the questionnaire

2. Method

The method used in solving the problem in this study is to use the following steps:, Literature Review, Search and study existing literature in accordance with the problem and Questionnaire and Data Processing

This research is descriptive using a questionnaire based on Aydin & Tasci's e-learning readiness (ELR) model with a scoring scale. The scores used in the assessment sheet are 5, 4, 3, 2, and 1 for each question. After the assessment sheet is filled in by the respondent, the total score will be obtained, then the final average is calculated using the formula :

$$\bar{x} \approx \frac{\sum X}{n}$$

where :

$\bar{x}$ = total average

$\sum X$ = total score

n = number of respondents

Then an ELR model scoring scale from Aydin & Tasci (2005) :

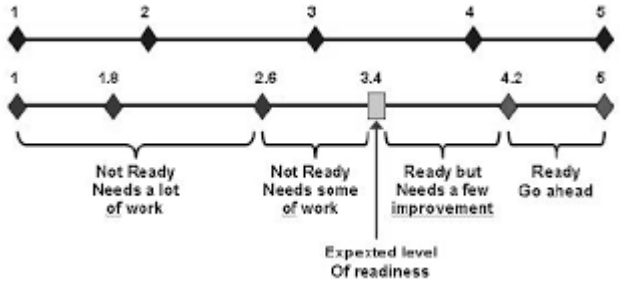


Fig. 3. An ELR model scoring scale

3. Result and Discussion

The study locations were in Elementary School of 15, 19, 20, 21 and 22 Jakarta City with 180 respondents of teachers, students, and parents. Data collection was carried out from April 30 to May 4, 2018. The number of respondents from questionnaires was :

Table 1. Number of respondents

Elementary School	Respondents	Number of respondents
15	Teacher, students, and parents	15
19	Teacher, students, and parents	15
20	Teacher, students, and parents	15
21	Teacher, students, and parents	15
22	Teacher, students, and parents	15
Number of Respondents		**75**

Based on table 1 above, the total questionnaire processed was only 75 questionnaires from 180 questionnaires distributed.

The results of filling out the questionnaire for the Elementary School of 15 are:

Table 2. Results for the Elementary School of 15

Elementary School	ELR Factors	ELR Score	Category
15	Technology	3.97	Ready, needs a few improvement
	Innovation	4.11	Ready, needs a few improvement
	Human resources	4.86	Ready, Go ahead
	Self-development	3.23	Not ready, needs some of the work
ELR scoring		**4.04**	**Ready, Go ahead**

The results of filling out the questionnaire for the Elementary School of 19 are :

Table 3. Results for the Elementary School of 19

Elementary School	ELR Factors	ELR Score	Category
19	Technology	3.67	Ready, needs a few improvement
	Innovation	3.95	Ready, needs a few improvement
	Human resources	4.7	Ready, Go ahead
	Self-development	3.24	Not ready, needs some of work
ELR scoring		**3.89**	Ready, needs a few improvement

The results of filling out the questionnaire for the Elementary School of 20 are:

Table 4. Results for the Elementary School of 20

Elementary School	ELR Factors	ELR Score	Category
20	Technology	3.44	Ready, needs a few improvement
	Innovation	4.05	Ready, needs a few improvement
	Human resources	4.9	Ready, Go ahead
	Self-development	3.23	Not ready, needs some of work
ELR scoring		**3.91**	Ready, needs a few improvement

The results of filling out the questionnaire for the Elementary School of 21 are :

Table 5. Results for the Elementary School of 21

Elementary School	ELR Factors	ELR Score	Category
21	Technology	3.37	Ready, needs a few improvements
	Innovation	4.05	Ready, needs a few improvements
	Human resources	4.8	Ready, Go ahead
	Self-development	3.2	Not ready, needs some of work
ELR scoring		**3.86**	Ready, needs a few improvements

And the results of filling out the questionnaire for the Elementary School of 22 are:

Table 6. Results for the Elementary School of 22

Elementary School	ELR Factors	ELR Score	Category
22	Technology	3.47	Ready, needs a few improvements
	Innovation	3.97	Ready, needs a few improvements
	Human resources	4.72	Ready, Go ahead
	Self-development	3.17	Not ready, needs some of work
ELR scoring		**3.83**	Ready, needs a few improvements

4. Conclusion

The results of the questionnaire for Elementary School of 15 showed an ELR score of 4.04 which means the school is ready to implement e-learning, while for Elementary School of 19 showed an ELR score of 3.89, Elementary School of 20 showed an ELR score of 3.91, Elementary School of 21 showed an ELR score of 3.86 and Elementary School of 22 showed an ELR score of 3.83 which means in the ready category but needs a few improvement. And the other, Human Resource Factors are ready to be applied e-learning. While technological factors, innovation factors, and self-development factors must be improved again.

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