
Library Research: Online Learning at High School as Learning Media in Indonesia**Monica Fransisca¹, Renny Permata Saputri², Yuliawati Yunus³**monicafransisca@upiypk.ac.id, renny_permata@upiypk.ac.id, yuliawati_yunus@upiypk.ac.id

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Abstract

Technology is important in developing the quality of learning in Indonesia. The existence of technology for education encourages the development of learning media, especially online learning. The purpose of this research is to examine the implementation of online learning at the high school level in Indonesia. The method used is literature review research, where the research results come from several sources. The research results obtained using online learning as learning medium can also directly improve student learning outcomes by 35.49% besides that it can also provide efficiency in terms of time and technically effective, for example the use of e-learning with effectiveness of 78.95% is categorized as effective used. Based on the results, it can be concluded that the use of online learning media in high school can be applied properly and well and is very useful in improving the performance of the quality of learning in Indonesia.

A. Introduction

Technological developments in industrial revolution has entered 5.0 nowadays, this development affects almost all sectors including education. The role of technology in education is not only to provide new learning methods, but also to provided new learning media with high innovation value [1]. Technological developments also have an impact at educational's environment and the results of educational process. The educational environment used to be dominated by one-way learning has now shifted to two-way with the existence of technology [2]. The students become more active with the existence of technological devices which can be used in the learning process, then has a significant influence on learning outcomes [3].

Learning media can be interpreted as all devices that can be used in learning process. Before development of technology era, learning media were only in a form of conventional media and majority were manual [4]. Learning media has an important role in learning process, which is to help learning process so that it can take place well [5]. The development of learning media also follows along with technological developments. Conventional media have started to turn into technology-based media, even internet-based [6]. This internet-based learning media is better known as online learning media, where the media utilizes the internet in its use.

This online learning media consists of many varieties, according to the development of existing technology. Based on several research results, it was found that the use of the internet or online learning has been carried out since the last few years. The use of online media is not only in higher education, but also in secondary schools, both high schools and vocational high schools [7]. The use of online learning is also supported by the facilities which provided by each school [8]. The majority of high schools currently provided facilities for technology and internet that can be used for learning process [9].

In theory, online learning media means learning media that utilize information technology and internet in its use [10]. One example of online learning is a web-based learning media or using a website in learning process [11]. Web-based learning media utilizes a set of computers and internet as implementation of learning. In addition to web-based learning media, there are also Android-based learning media, this media utilizes smart devices in its use [12]. The use of android as learning media has been implemented through research in recent years. Android can be used as learning media because the majority of teachers and students already have their own smart devices. The functions provided by Android are also able to support the learning process. In addition to the two examples of learning media, there are also e-learning, which also utilizes the website in its application. Although e-learning can be categorized into web-based learning media, e-learning has special features and models in its design [13].

The purpose of this research is to examine the role of online learning as learning media at the secondary school level. Based on some of the descriptions above regarding learning media, as well as the development of learning media from conventional to technology, it can be assumed that online learning can be applied at the high school level and able to help learning process become better. This can be assumed based on several research results, articles, and books with the

theme of learning media, the development of learning media, web-based learning media, android-based learning media, and learning media in the form of e-learning. Through this research, it is expected to be able to sharpen the theory regarding the role of online learning as learning media in learning process.

B. Research Method

This research method used a literature review that leads to a qualitative literature review, meaning that the data obtained comes from several sources [14]. The sources in question are in the form of articles and books with the theme of learning media, online learning media, web-based teaching media, and Android-based teaching media and e-learning. The procedures carried out in the literature review research are as follows:

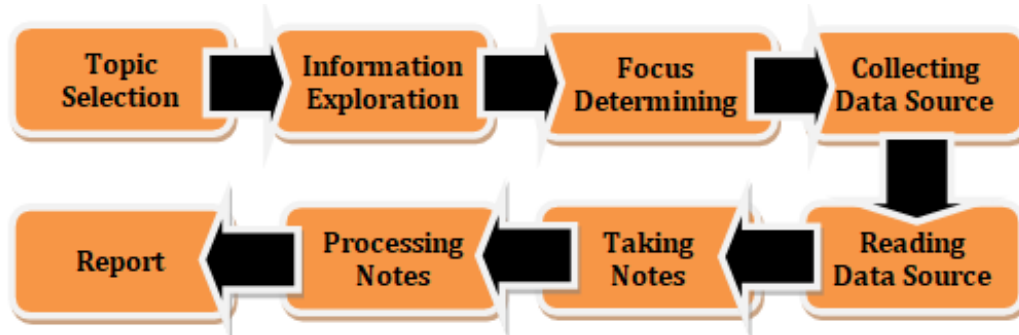


Figure1. Library Research's Procedure

The selection of topics can be done based on the problems in the existing phenomena, then the process of exploring information on the selected topics is carried out in order to determine the research's focus. After determining the research focus, the next step is to collect data sources based on the focus and selection of the topic. If the data has been obtained, then the reading of the data is carried out which is then followed by making notes and processing the data. If the data has been processed, it can be carried out preparing reports or compiling research results based on the data obtained in accordance with the selection of topics.

C. Result and Discussion

Internet users in Indonesia have increased significantly from year to year, this is obtained from the results of a survey by the Central Statistics Agency on computer ownership and internet users in the general public. The results of the survey stated that an increase occurred from 2017 to 2021 [15]. Although the number of computer ownership has decreased in a certain year, the number of internet users has continued to increase significantly. This means that internet users continue to increase even though they do not have a computer, which means internet users are not only focused on owning a computer. The following illustrates the percentage increase in computer ownership and internet use in 2017-2021:

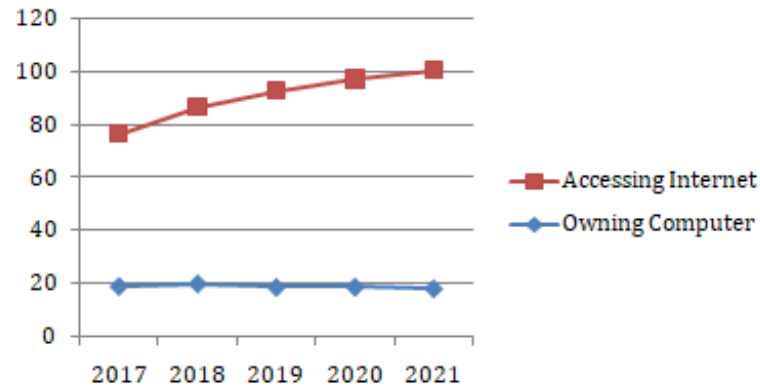


Figure 2. Data of Owning Computer & Internet User (2017-2021)

Based on the figure, it can be seen that internet users continue to increase from 2017 to 2021. These internet users include teachers and high school students. The data states that internet users in the last five years have continued to increase, making it possible to use the internet in the field of education.

Referring to the article that has topic of online learning media in the form of e-learning, it is concluded that e-learning as learning media is very helpful in learning process [16]. Through e-learning, learning materials can be delivered virtually and in digital form. Learning materials could be delivered in online way, in the form of video conferences, interactive videos, or implementation of exercises and tests in real-time[17]. This certainly provides efficiency in terms of time and is technically effective. In one article it was stated that the level of e-learning's effectiveness as learning media was quite high because there was an increase in learning outcomes by 35.49% [18]. In another article it was also stated that the percentage of e-learning's effectiveness as learning media was 78.95% and was categorized as effective [19]. Next, a research article also stated that e-learning was effectively applied as online learning during the COVID-19 pandemic. Based on this research, it is stated that e-learning is categorized as effective based on several categories [20]. These categories is illustrate through the following figure:

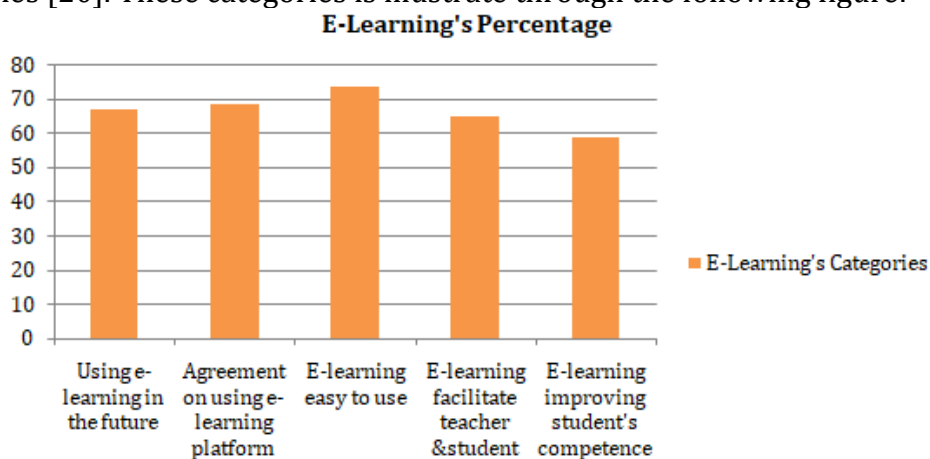


Figure 3. Percentage of E-Learning Effectiveness based on Categories Research

Based on several research results from the article, it is concluded that e-learning can and is appropriate to be used as a learning media in online learning, especially for high school level.

The next online learning media studied is android-based media, which means learning media that utilize android and smart devices in its application [21]. Android is not only used as an ordinary communication device, but Android has also begun to be used as teaching media. The choice of android as teaching media is because android users are quite high among school teenagers. Based on statistical data, smart device users have increased every year from 2018 to 2022, it can be seen in the following figure [22].

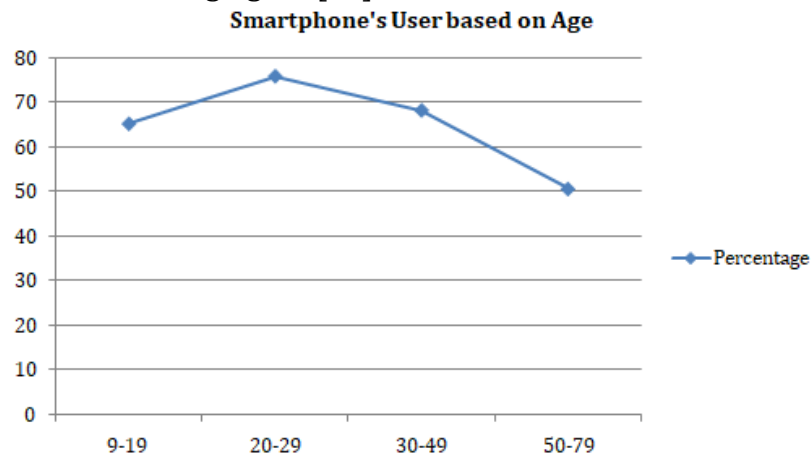


Figure 4. Smartphone's User based on Age

Based on the picture, it can be seen that smartphone users at school's age are quite high, so the selection of Android as one of the teaching media in the online learning category is the right option. Several articles that refer to the use of android as learning media also state that android is considered effective as learning media. The first article states that android as media of instruction at the high school level is classified as effective because it can improve learning outcomes with a percentage increase by 63% [23]. The next article regarding android-based learning media also states that this media has a good effectiveness value based on the results of his research using observational data collection techniques and questionnaires [24]. In this research, android media was combined with an e-module to make it more interesting for students. The third article on android-based media also states that the validation analysis of android has a very high validity value, as of percentage 96.8% [25]. Referring to several research results and articles, it can be concluded that android-based media is also appropriate to be applied as learning media at high school level.

From the literature review regarding online learning, it can be stated that teaching media which utilize online learning are appropriate and good to be applied to the learning process. The selection of the most appropriate media for each learning process depends on the choices and facilities provided by schools and teachers. In terms of school facilities, it can be assumed that the majority of schools have provided sufficient facilities for the implementation of learning that requires online learning media. It is hoped that in the future schools are able and willing to use online learning media.

D. Conclusion

The development of learning media that follows technological developments is very helpful in the learning process. Especially at this time where learning is not

only done in one direction, or not always face-to-face. So the existence of online learning media is very helpful, both time and technically. Research related to online learning media mostly states that online learning media has a good value of effectiveness and validity in the learning process. Even the use of online learning media can also improve student learning outcomes.

The data sources chosen for the literature review research are in the form of books and articles related to learning media, online learning, and statistical data on internet and smartphone users according to age. The conclusion obtained is that online learning can be applied as learning media in high schools if it meets several criteria according to the needs of each school.

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