

Comparative Study Of Android-Based Learning Media With Web-Based Learning Media

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Abstract

Many choices of learning media were available, so it's necessary to research which learning media are appropriate and suit the needs. Learning media are now technology-based, for example android-based and web-based learning media. The use of these two media was similar and widely used, so it's necessary to examine the comparison of effectiveness. To conduct this research, a comparative analysis method with a literature study approach was used. Through the analysis, a comparison was carried out by comparing several research relevant with the themes. The research focuses on the level of effectiveness. The comparison of this research that comes from the research team itself, and several other studies. Based on comparison, the results showed that android-based learning media had a higher effectiveness percentage, 87.67%, while web-based learning media had average 80.39%. The conclusion of the research was that android-based learning media has a higher effectiveness compared to web-based learning media.

A. Introduction

The application of technology-based learning media is very common and even constitutes the majority of the learning process. The use of technology-based learning media that is applied is not only limited to the use of offline technology but also online technology. This is supported by increasingly advanced technology today and is also friendly to all ages[1]. Learning that used to be monotonous and one-way has now shifted to two-way and can even become an independent learning process. There is a lot of technology that has emerged for the education sector and is easily accessible and obtainable by anyone.

One form of technology-based learning media is Android-based learning media which has been widely applied by several levels of education [2]. Android-based learning media is the choice of many educators because of its ease of access and efficiency in use because the majority of students have Android devices [3]. In terms of effectiveness, Android-based learning media has very good effectiveness values in its implementation [4]. This is quoted based on several studies related to the implementation of Android-based learning media at the school level. In one study, it was stated that Android-based learning media can increase students' interest in learning because of its up-to-date nature [5]. Other research also states that Android-based learning media is suitable for application in school level education [6].

Another technology-based learning media that is also widely applied is web-based learning media. This statement is based on finding articles that are relevant to the topic of web-based learning media [7]. The majority of choices for web-based learning media are based on the reason that using the web is more effective and efficient in terms of time, although less efficient in terms of cost [8]. Through the implementation of web-based learning media the learning process can become more effective because web-based learning media can be accessed from anywhere and at any time [9]. This is also supported by the level of effectiveness of web-based learning media which is included in the category of very effective for implementation at the school level, based on statements from several studies [10, 11, 12].

Based on several research results regarding technology-based learning media, research was conducted with the aim of comparing Android-based learning media and web-based learning media based on their level of effectiveness in application as learning media. The method used in this research is a comparative study, with a comparative analysis approach based on literature study. The literature study that is used as a reference is research on the theme of Android-based learning media, Android-based learning media at school level, web-based learning media, learning media in the form of online learning, and learning media in the form of e-learning.

B. Research Method

The research carried out is a comparative study with a comparative analysis approach based on literature study. Comparative analysis is a research method that compares several research results with the same theme [13]. To obtain the results of this research, a literature study was used, which means referring to several existing research results [14]. In comparing the results of this research, the

research team also compared the results of their own research which had the same theme, which was then supported by others similar research. The research steps carried out based on literature study can be seen in the following picture.

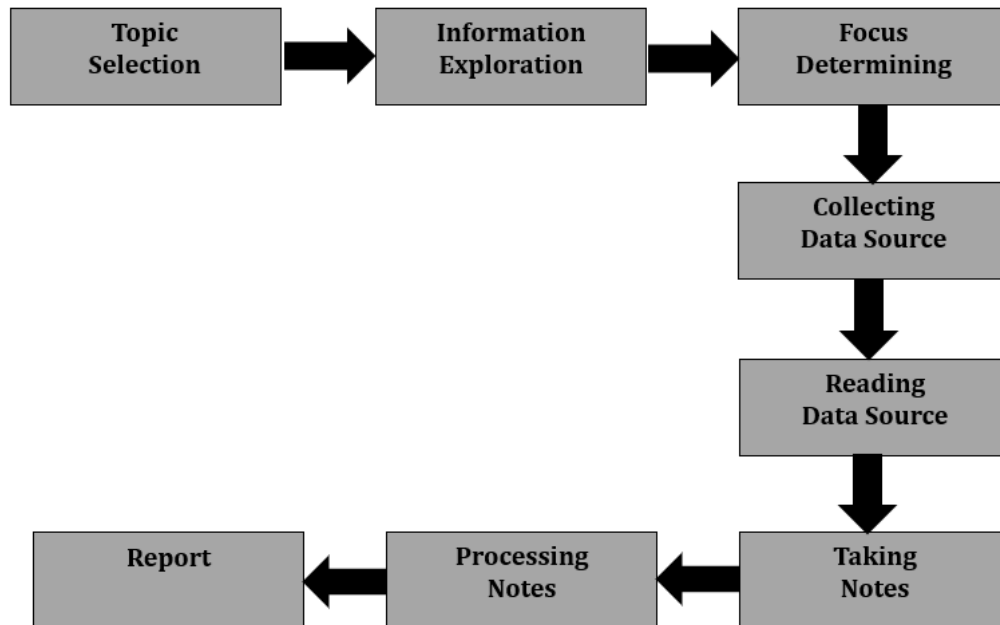


Figure1. Library Research Method

To obtain the results of a comparative analysis of technology-based learning media, a literature study approach was used with steps as shown in the picture above. The first stage is to choose a topic, in this case the topic is comparing Android-based learning media and web-based learning media based on their level of effectiveness. Next, information was collected to obtain several relevant research results to support the research team's own existing research results on the same topic. Then proceed with determining the focus, namely focusing on comparing the level of effectiveness of each learning media. After determining the research focus, data is collected based on several sources relevant to the research topic and continues with the data analysis process. If the results of the data analysis have been obtained, it can be continued to the next stage, namely determining and processing the results of the data analysis comparison and then carrying out the reporting process or recording the results of the comparison of the level of effectiveness of Android-based learning media and web-based learning media.

C. Result and Discussion

The use of Android-based learning media at the educational level has been implemented in the last few years, as has research with the theme of Android-based learning media. The research focuses on the level of effectiveness of Android-based learning media at the school level. Based on research results from the research team itself, it was found that the level of effectiveness of using Android-based learning media was at a percentage of 84.96% when applied to vocational high schools [15]. In this first research, the 4D method was used which

consisted of Define, Design, Develop and Disseminate. To obtain effectiveness test results, it was carried out at the development stage and used a questionnaire method which was distributed to users of Android-based learning media. The second research uses the ADDIE method which consists of analysis, design, develop, implementation, and evaluation; To determine the level of effectiveness of learning media, testing is carried out at the evaluation stage. Effectiveness testing is carried out through questionnaires which are also distributed to media users. The final test results show that the level of effectiveness in using Android-based learning media is at a percentage of 86.44% [16]. The third study also used the 4D method but applied to different subjects. Effectiveness testing was carried out through questionnaires filled out by students. The results of effectiveness testing showed that the percentage of effectiveness was 90.63% [17]. The fourth research used the 4D method with different subjects, effectiveness testing was carried out at the develop stage. The testing step was carried out through a questionnaire given to teachers and students, so that the final effectiveness testing result was 88.67% [18]. Based on several results of testing the effectiveness of Android-based learning media, it can be concluded that Android-based learning media is very effective to be applied as learning media at the school level.

Web-based learning media is also widely applied at the school level as a learning media that can help the learning process. Below are presented several research results which also include the results of the research team's research on web-based learning media. The first research used research and development methods, with the four-D approach as the development model. In testing the effectiveness of this research, it was carried out by comparing learning outcomes before and after the use of web-based learning media. The result was an increase in learning outcomes of 35.49% and the percentage of effectiveness level was 80.65% [19]. The second research used the 4D method and tested its effectiveness using a questionnaire filled in by educators and students. The effectiveness testing stage was carried out at the develop stage and the final results of the effectiveness test were obtained at a percentage of 79.09% [20]. The third research with the theme of web-based learning media uses the 4D method and effectiveness tests are also carried out at the development stage using objective tests. The final results of the effectiveness test showed that the average percentage was 82.24% [21]. Next, the fourth research was to test the effectiveness of web-based learning media using descriptive quantitative methods and subject selection using random sampling. Effectiveness testing used a questionnaire and the final result was obtained, namely the effectiveness of teacher assessment based on the convenience aspect at a percentage of 80% and the usability aspect at a percentage of 79.2%, so that the average percentage for both was 79.6% [22].

Based on the explanation of research results on Android-based learning media, it can be concluded that the average level of effectiveness is 87.67% summarized from four relevant studies. Meanwhile, for web-based learning media research referred to from four relevant studies, the average level of effectiveness was 80.39%. So it can be concluded that based on descriptive analysis research using a literature study approach carried out by the research team, it is stated that Android-based learning media has a higher effectiveness value compared to web-based learning media. This could be caused by several factors in the

implementation process of the two learning medias. A more detailed comparison of the effectiveness values of Android-based learning media with web-based learning media can be seen in the following graph.

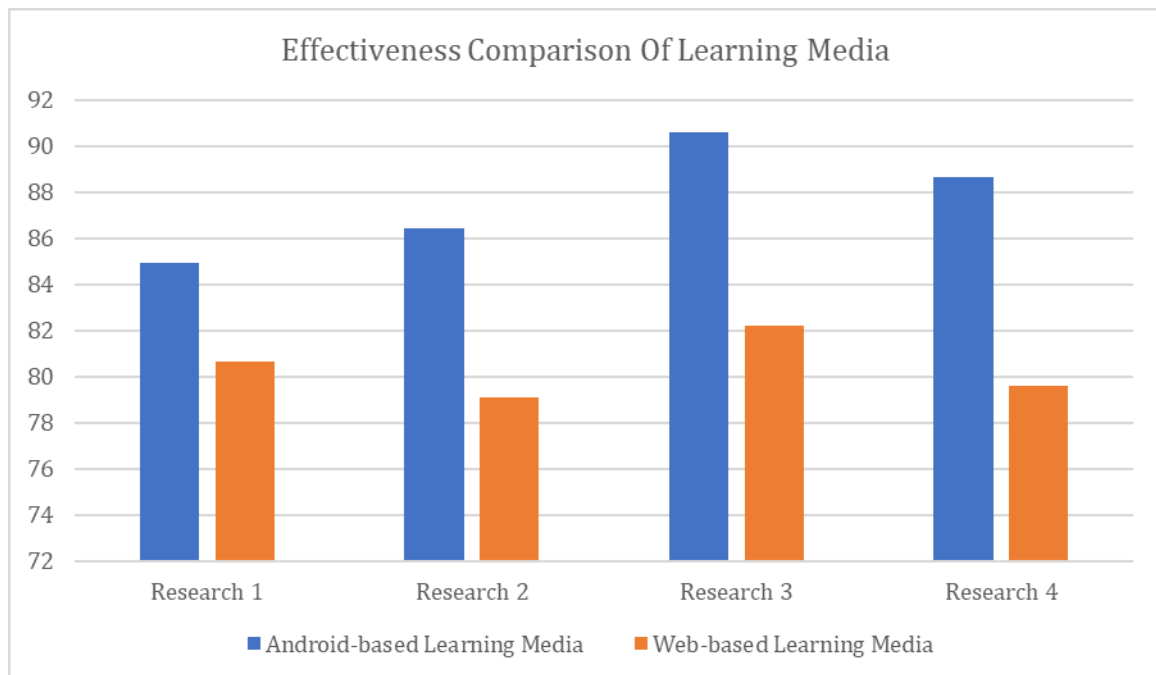


Figure 2. Graphic of Effectiveness Comparison Learning Media

Based on this graph, it can be seen that the average percentage of the effectiveness value of Android-based learning media is higher when compared to web-based learning media. Even though the two media are both included in the very effective category to apply, there are differences in effectiveness values between these two learning medias.

D. Conclusion

Along with the many choices of learning media currently available, including the choice of technology-based learning media, it is able to provide progress in the learning process. In the process of implementing learning media, it is also necessary to review the choice of appropriate learning media that suits the needs of educators and students. Likewise, the choice of technology-based learning media is tailored to the needs and effectiveness of its application. Based on the comparison results through comparative analysis with a literature study approach, it was found that Android-based learning media had a higher average percentage in terms of effectiveness. The comparison results between Android-based media and web-based media are an average of 87.67% and 80.39%. The conclusion of this research was that the use of Android-based learning media is more effective for implementation at the school level compared to web-based learning media.

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