Analysis of Student Needs for Android-Based Learning Media for Biology Subjects

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Abstract

Learning media is one component of learning. The accuracy of the selection of media and learning models that will be applied is one of the factors in the success of effective learning. This study aims to obtain the results of the analysis of student needs for android-based learning media in biology subjects. This student needs analysis is focused on SMPN 16 Poleang Tengah students. The selected method in data collection is a quantitative method using the purposive sampling technique. The sample used to obtain the data is class VIII student respondents and consists of 22 respondents. Data were collected by filling out a questionnaire the form of a questionnaire. The results of this questionnaire data are then processed and made in the form of percentages and tables. Analysis of student needs for Android-based learning media shows that the use of Android-based learning media in the learning process is very much needed, and students feel interested in using Android as a learning medium. This can be seen based on the percentage of statements agreeing to manufacture android-based learning media in biology subjects, namely the percentage of 90.1% agreeing. The analysis of student needs will be used to design android-based learning media for biology subjects in class VIII of SMP Negeri 16 Poleang Tengah.

Keywords: Learning media, Android,

A. Introduction

The development of science and technology (IPTEK) requires students to be able to use Android-based applications. This, of course, affects the use of learning media. The learning media used are not conventional but are learning media that can be used modernly.

One form of online learning media is Android-based learning media. Android learning media that utilizes mobile systems on smartphones is already well-known and popular in the world of education (Kaliisa, 2017). Using Android learning media can increase students' willingness and interest in the learning materials presented (Menrisal et al, 2019). This android-based learning media has also been proven to be effective in learning activities (Sutiasih, 2019).

Based on observations made at SMPN 16 Poleang Tengah, it is known that the school has been equipped with computer and internet facilities so that students and teachers can access them. Most students already have personal access facilities in the form of Android smartphones

that can be used for learning activities. However, some teachers have not made full use of these facilities.

Based on the observations obtained, the purpose of the study is to design and create Android-based learning media. Before designing and making this android-based learning media, it is necessary to analyze student needs for learning media, especially android-based learning media. This needs analysis needs to be carried out to determine student readiness and student needs for learning media.

B. Literature Review

1. Learning Media

Media in learning is always associated with technological interventions, symbol systems, and processing abilities. Something is called a learning media if the most obvious feature is its technology, in this case, the mechanical and electronic aspects that determine its function. (Sulasteri, et al., 2018). if a medium that transfers messages or information has an instructional purpose then the media is called "learning media" (Arsyad, in Panjaitan, 2017). In addition, learning media is a means of conveying information about learning concepts that are very well received (Sari & Setiawan, 2018).

Learning media is closely related to the definition of educational technology. By the 2008 definition of educational technology issued by AECT "educational technology is the study and practice of ethics about facilitating learning and improving performance by creating, using, and managing processes and appropriate technological resources". By this definition, as a learning technologist, you are required to be able to create and facilitate learning from a learning resource, one of which is learning media which in the process includes the five areas of educational technology in a structured manner (Masturah et al, 2018). Umar (2013) said that teaching media are tools, methods and techniques used as communication intermediaries between teachers and students to make communication and interaction between teachers and students more effective in the teaching education process in schools.

2. Android

Android is a mobile operating system similar to the Linux operating system but has been modified. The history of Android is explained by Lengkong et al. (2015) that Android was released in October 2003 by four IT (Information Technology) experts, namely Andi Rubin, Rich Minner, Nick Sears and Chris White. These IT experts founded a company called Android.Inc in California US. But in August 2005, Google bought it from Android.Inc. The Android operating system is based on the Linux platform, which is open source and has been modified. Ichwan and Hakiky (2011) explain. In the development of Android, the Open Handset Alliance (OHA) was formed, a consortium of 34 hardware, software and telecommunications companies, including Google, HTC, Intel, Motorola, Qualcomm, T-Mobile, and Nvidia.

According to Satyaputra et al (2016), Android is an operating system for smartphones and tablets. The operating system can be illustrated as a 'bridge' between the device (device) and its users so that users can interact with their instruments and run applications available on the device. Meanwhile, according to Safaat in Ichwan & Hakiky (2011), Android is an operating system for Linux-based mobile devices that includes an operating system, middleware, and applications. Android is an operating system for mobile phones based on Linux. Android provides an open platform for developers to create their applications. The research results from Irwanto (2017) show that students use smartphones to support learning programs inside and outside the classroom.

C. Methodology

1. Research Design

This research is a type of survey research with a quantitative approach. The population in this study were students of SMPN 16 Poleang Tengah. The sampling technique in this study used a purposive sampling technique. The sample used is class VIII SMPN 16 Poleang Tengah.

2. Instruments

The instrument used in this study was a questionnaire. This questionnaire contains questions related to the needs of students and facilities that students or schools have. This student needs analysis questionnaire was developed by focusing on student needs for learning media, especially Android-based learning media.

3. The Technique of Data Analysis

The results of this questionnaire were then analyzed using the percentage formula proposed by (Sugiyono, 2013):

$$P = \frac{f}{n} \times 100\%$$

Keterangan:
P: Persentase skor siswa
F: frekuensi skor siswa
N: jumlah siswa

Furthermore, the needs analysis results are displayed in the form of tables and graphs to make it easier to read the data from the needs analysis.

D. Findings and Discussion

1. Findings

The student needs analysis questionnaire contains indicators of student needs for learning media, especially android-based learning media. This indicator is divided into 10 question points related to teaching media and learning activities that students have carried out. Respondents to the questionnaire consisted of 22 students. Questionnaire indicators can be seen in Table 1.

Table 1. Indicator of student needs for Android learning media

No.	Question	Percentage of Answers	
		Yes	No
1	You have an Android smartphone	95	**5**
2	Using an Android smartphone regularly	72,7	27,3
3	Using an Android smartphone to study	63,6	36,7
4	Teachers use Android-based learning media in the learning process	45,5	54,5
5	Biology teacher introduces android for learning activities	36,4	63,6
6	The use of an Android smartphone has become a necessity for you	95,4	4,6
7	You have difficulty understanding biological material	91	9
8	You have difficulty understanding biological material	59,1	40,9
9	Teachers must use technology media, especially android learning media, in biology learning.	81,8	13,62
10	You agree if an Android-based learning media is designed for biology subjects.	90,1	9,9

Based on the student needs questionnaire for Android-based learning media in digital simulation subjects, it can be seen that students are familiar with Android smartphones which have even become a necessity for these students. This can be seen from the results of the questionnaire which shows that 95.4% of students agree with the statement that smartphones are very important in learning. Apart from that, from the results of the questionnaire, it can be seen that 90.1% of students agree that Android smartphones are important to use in biology learning.

2. Discussion

The results of the media need analysis show that 95% of students have an Android smartphone, while 5% of students do not have an Android smartphone. In addition, 72.7% of students use Android regularly, while 27.3% do not use smartphones regularly. From the questionnaire results, it can be concluded that most students use smartphones regularly in their daily lives.

One of the causes of students' high use of smartphones is that this tool makes it easier for students to do activities. According to Ula (2019), students use smartphones because their close environment influences them, ranging family, relatives, and friends who first use them, so they inevitably have to use them so they don't look like less friendly children. The results of research by Sobon et al (2019) show that the use of smartphones influences the learning motivation of

elementary school students in the Mapanget subdistrict even though the level effect is still relatively low 5.7% with a significance level of 0.028.

The results of the media need analysis show that 63.6% of students use Android smartphones to study, while 36.7% of students use smartphones to open social media, games and entertainment. From these results, it can be seen that students use Android to assist in learning. Some students use the Google application on Android to find references for the material being studied. Others use the Google application on Android to find resources related to assignments given by the teacher. From the results of the analysis, it can be seen that students not only use smartphones as a learning resource but also use smartphones as entertainment The results of the study by Ruziana et al (2017) show that the magnitude of the effect between uses of smartphones on class student learning outcomes XI SMA Negeri 1 Teluk Keramat by 1.8% as indicated by the coefficient value determination of 0.018, based on the provisions to which this figure applies are located between 0%-19% and included in the category very low.

A total of 54.5% of students think that teachers use Android as a learning medium, while 45.5% of teachers do not use Android as a learning medium. In addition, 63.6% of students stated that biology teachers did not introduce Android media in the learning process. These results show that biology teachers have not fully utilized Android as a learning medium. Given students' high use of Android, the teacher should facilitate students using Android as a learning support medium. Minovic (2012) stated that today's students have grown up using devices such as computers, cell phones, and video consoles for almost every activity, from studying to working, or entertainment.

The use of Android smartphones has become a necessity for every student. By the questionnaire results, 95.4% of students stated that an Android smartphone was always needed. This shows that Android is a smartphone that has functions in everyday life. As many as 91% of students stated that using an Android smartphone can make learning more fun. The research results by Prasetyo et al. (2015) show that using Android can increase students' learning motivation.

Biology is one of the most challenging subjects to understand. The questionnaire results showed that 59.1% of students had difficulty understanding the material in biology. One of the reasons is that many biological materials contain foreign terms. In addition, biology material does study not only the morphological structure of plants and animals but also their anatomical and physiological structures. As many as 80.1% of students think biology teachers need to use technology media, especially android learning media, to teach biology. In addition, 90.1% of students agreed if the teacher designed an android-based learning media for biology subjects. From the results of this needs analysis, it can be seen that biology is one of the subjects that require learning media, especially android-based, so that students can understand the material taught by the teacher. The results of research by Muyaroah & Fajartia (2017) state that Android-based learning media is effective in students' learning outcomes.

E. Conclusion

Based on the results of observations, interviews, and filling out questionnaires through questionnaires, it can be concluded that the results of the analysis of student need for android learning media in biology subjects show that students need the media. This is concluded based on the habits of students and the needs of students with Android smartphones. The last statement in the questionnaire also shows the desire and interest of students to use Android learning media in their learning activities, with a percentage of 90.1% agreeing with the Android learning media for biology subjects.

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