Students' Perceptions of Android-Based Interactive Multimedia in Learning Biology

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Abstrak

Multimedia interaktif adalah bagian penting dari pembelajaran. Multimedia dapat digunakan sebagai sarana pembelajaran untuk meningkatkan kualitas pembelajaran. Media interaktif yang dibuat untuk Android membantu siswa belajar lebih banyak dan membuat perbedaan besar dalam seberapa baik siswa belajar. Tujuan dari penelitian ini adalah untuk mengetahui bagaimana persepsi siswa tentang penggunaan multimedia interaktif berbasis Android di kelas Biologi di SMA pasca COVID-19. Penelitian ini dilakukan dengan 60 siswa dari Mts Ar Royan Aek Nabara Labuhanbatu. Siswa dikirim kuesioner untuk mengumpulkan informasi, dan hasilnya dianalisa. Menurut temuan persepsi, 67 persen siswa telah menggunakan multimedia interaktif berbasis Android, 69 persen guru menggunakan alat audiovisual untuk mengajarkan materi pembelajaran, dan 78 persen responden lebih suka menggunakan multimedia interaktif. Hal ini menunjukkan bahwa penggunaan aplikasi multimedia interaktif berbasis Android dapat meningkatkan kualitas dan efektivitas pendidikan biologi di masa pandemi COVID-19.
Kata Kunci: persepsi siswa, Android, interaktif multimedia, biologi

Abstract

Multimedia that you can interact with is an important part of learning. Multimedia can be used as a learning tool to improve the quality of learning. Learning media can be used to try out different ways to teach and learn. Interactive media made for Android helps students learn more. Using this material makes a big difference in how well students learn. The goal of this study is to find out how students feel about using interactive multimedia based on Android in Biology classes at Senior High Schools after COVID-19. This study was done with 60 students from Mts Ar Royan Aek Nabara Labuhanbatu. They all filled out a questionnaire. Students were sent a questionnaire to gather information, and the results were looked at. According to the perception findings, 67 percent of students have used interactive multimedia based on Android, 69 percent of teachers use audiovisual tools to teach ideas, and 78 percent of respondents prefer to use interactive multimedia. This shows that using Android-based interactive multimedia apps could improve the quality and effectiveness of biology education during the COVID-19 epidemic.
*Keywords: students' perceptions, Android, multimedia interactive, biology*

INTRODUCTION

In affluent countries, the impact of the COVID-19 pandemic on students' learning, lives, and mental health has been thoroughly examined. Little is known about how and to what degree the COVID-19 epidemic affects students' schoolwork, everyday lives, and mental health, as well as their perspectives of the pandemic in developing nations (Wu et al., 2022). In the past two years, the Covid-19 pandemic has resulted in students no longer being able to go to school and instead learning online at home. For students to continue studying from home, the educational system must adjust to accommodate them (Samala et al., 2021) (Watrianthos et al., 2021). In addition, teachers must be able to use a variety of instructional methods to meet the needs of students during a global epidemic. Teachers must be able to utilize Zoom, Google Meet, WhatsApp, Google Classroom, YouTube, and other multimedia devices to teach (Watrianthos et al., 2021).

When it comes to learning, interactive multimedia is an essential component. It is possible to employ multimedia as a tool to enhance the quality of learning. Teaching and learning activities may be explored through the use of learning media (LEOW & NEO, 2014). Learning styles of the 21st century are being applied through the usage of android-based media. Researchers who begin employing multimedia as a medium in the learning environment to reap the benefits of cognitive excellence are paying close attention to multimedia (Indarta et al., 2022).

Because Android-based interactive multimedia can help Biology study, interactive multimedia takes place online. According to the survey, students require learning tools that will assist them in studying biology during the Covid-19 pandemic, be fascinating and fun, and allow the subject being taught to be assimilated. Android-based interactive media improves student learning results. Using this material significantly improves students' learning outcomes. Furthermore, utilizing this application increases students' attention and makes it simpler for them to learn the topic. The findings revealed that interactive media based on Android had a beneficial influence on student learning outcomes (Sujarwo et al., 2022).
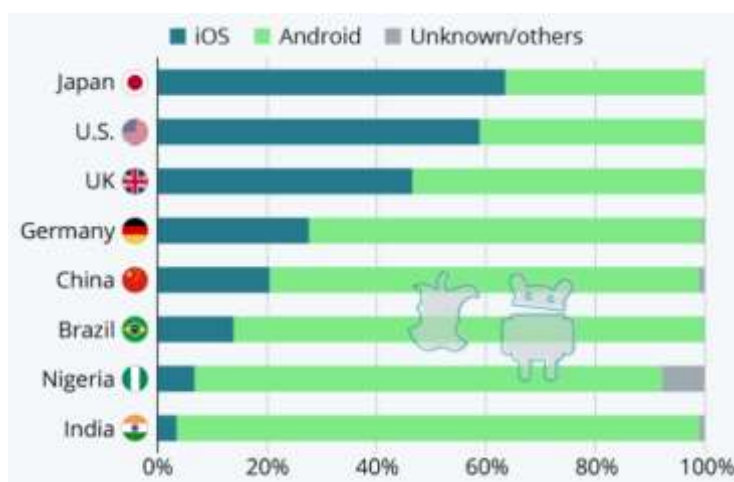
Figure 1. Mobile Operating Systems Market Share (Buchholz, 2020)

Figure 1 shows Android's dominance in major nations such as India, Brazil, China, and Germany. Meanwhile, in the United Kingdom and the United States, the proportion of Android and iOS users are roughly equal. The widespread usage of smartphones demonstrates that Android is the most effective medium for learning. Android-based educational media provides various benefits over conventional media(Buchholz, 2020).

Android may be used everywhere and at any time, therefore it conforms to the principle of the educational revolution that is required today, namely learning that can be done at any time and in any location. Mobile devices are also far less expensive than desktop computers. Mobile-Learning may be applied to daily

technology due to the small size and light weight of the device in comparison to desktop computers (Arliza et al., 2019) (Gunawan et al., 2021). There are, however, disadvantages to mobile learning, such as software problems, hardware problems, producing plenty of distractions, misusing the device for other reasons, or a lack of internet connection or energy (Thomes, 2019).

Some research on interactive multimedia has been published. The interactive multimedia research conducted at SDN Betet 1 Kediri City on the interaction between ecosystem components and food webs in the surrounding environment is appropriate for use as educational media (Agustin et al., 2022). The use of interactive multimedia created with the Macromedia flash 8 software to increase the learning motivation of primary school children is valid, practical, and effective (Wahyugi & Fatmariza, 2021).

The use of Android apps for educational purposes has been studied in past research and shown to be beneficial to students. According to the user's assessment, the interpretation value is 87.5 percent, and the percentage of interpretation assessment is in the "very excellent" category for Android while using the app (Huda & Marsono, 2021). Other studies have shown how android-based physics learning media linked with erosion disaster education may enhance critical thinking abilities and disaster readiness (Rahmawati et al., 2020).

The purpose of this research is to investigate students' perceptions of the usage of Android-based interactive multimedia in Biology classrooms at Senior High Schools after COVID-19. A questionnaire was employed in this study, which included 60 students from Mts Ar Royan Aek Nabara Labuhanbatu. Although the literature on interactive multimedia is expanding, studies on the subject are still scarce. As a result, there is an urgent need to research students' impressions of the quality of online education, particularly concerning the usage of Android-based multimedia. The main objective of this study is to investigate students' impressions of interactive multimedia based on Android. The study's findings are intended to aid in the development of multimedia, particularly in the schools being examined. The projected results allow institutions to review their learning medium based on the study's findings and suggestions and implement them in the case of another pandemic.

RESEARCH METHOD

The purpose of this research is to ascertain students' perceptions of Android-based interactive multimedia in the biology classroom. Mts Ar Royan was the site of this study. This study's participants were class X students, with a sample size of 60 persons. This is a descriptive study that uses current information to explain a specific scenario. A questionnaire was sent to students for data collection, and the findings were examined. This study focuses on students' impressions of interactive multimedia based on Android in elementary school biology learning. The questionnaire included questions regarding the types of learning media utilized by students during biology learning, as well as students' experiences using interactive multimedia based on Android. After the data is obtained, it is statistically examined using percentages.
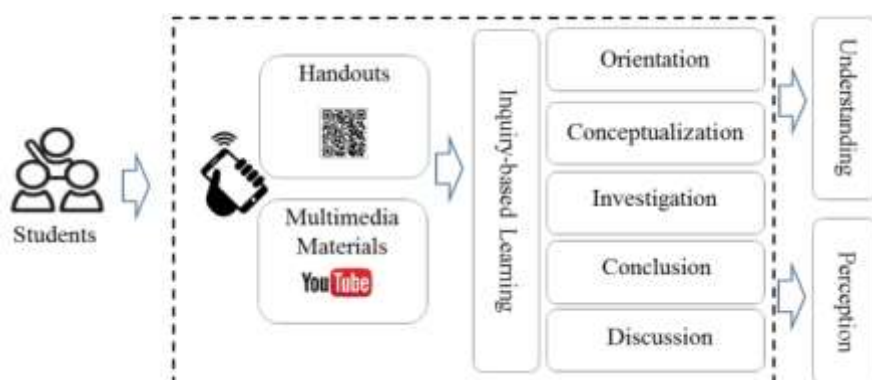

Figure 2. Android-based Interactive Multimedia Perception Method (CHOOKAEW et al., 2020)

Figure 2 shows the study steps used by Sasithorn CHOOKAEW (CHOOKAEW et al., 2020), which resulted in the discovery that students developed superior conceptual knowledge and understanding after participating in multimedia learning. According to the findings of the study, students obtain greater conceptual knowledge and comprehension after engaging in multimedia learning. Such an approach gives significant benefits in the development of their comprehension as well as favorable evidence in students' perspectives.

RESULT AND DISCUSSION

Biology students' experiences with Android-based interactive multimedia, as well as their perceptions of utilizing Android-based interactive multimedia, will be analyzed and the results.

Media Used in Biology Learning

Researchers will address the various mediums utilized in online biology learning in this roundtable discussion. Teachers have employed auditory, visual, and audiovisual resources to teach MTS students about biology, as seen in the image below.
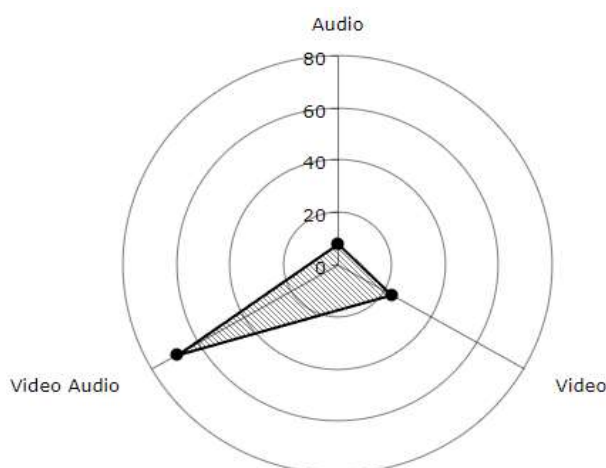

Figure 3. Media Used in Biology Learning (in percent)

Figure 3 demonstrates that 69% of teachers utilize audiovisual tools to convey learning concepts, 23% use visual media, and just 8% use auditory media. This is in line with SMP Negeri 2 Keruak studies (Hafiz & Kaelani, 2020), students in class VIII are more excited about learning and more rapidly acquire the subject they are given. Students are more likely to collaborate on solving issues when they use audio-visual technology in the classroom than when they don't. Learning outcomes may be improved significantly if students have an interest and enhance their ability to learn, according to this result. According to student feedback gleaned from focus groups and one-on-one interviews, teachers who rely too much on visual aids often leave their pupils feeling bored and perplexed. When it comes to studying biology during COVID-19, interactive multimedia is the best option because it's both fun and easy to grasp.

The Interactive Multimedia Experience on Android

In the graph shown in Figure 4, researchers describe what it's like for students to use android-based interactive multimedia.
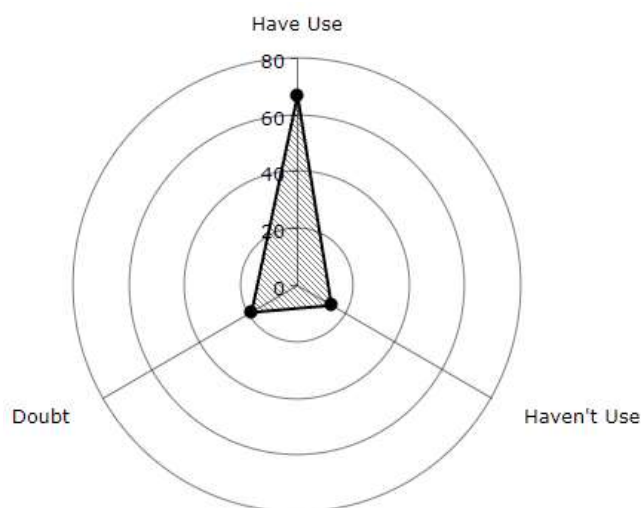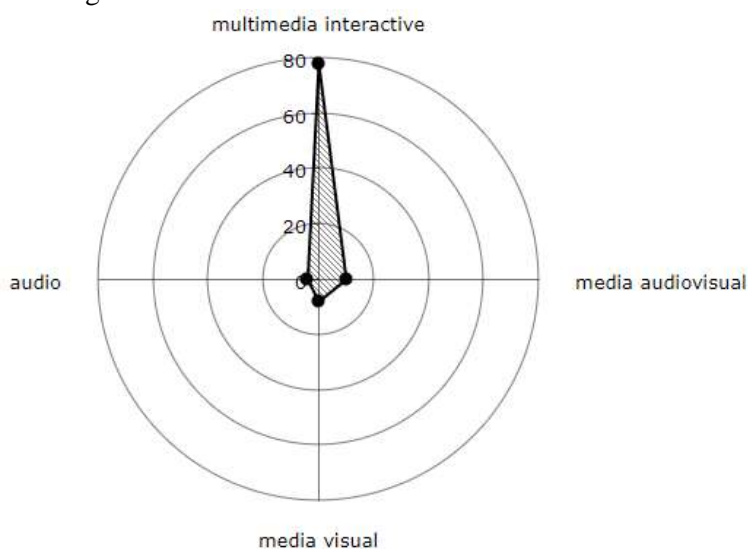
Figure 4. The Interactive Multimedia Experience on Android (in percent)

Figure 4 shows that 67 percent of students have used interactive multimedia based on Android, 14 percent have never used it, and the rest aren't sure. The results of the survey showed that students said they had used Android-based interactive media like Ruang Guru during the pandemic because they were exposed to a lot of advertising. This fits with research done on 100 junior high and high school students in Samarinda City using the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model and the success model of DeLone and McLean. They found that the Ruang Guru application is a tutoring app that makes it easier for students to learn on their own, online, and can be accessed with the help of structures (Haris et al., 2020).

Use of Android-Based Interactive Multimedia in Biology Education: Students' Perceptions

An Android-based interactive multimedia student survey in Biology says that 78% of respondents preferred using interactive multimedia, while 10% preferred audiovisual media, 8% preferred video, and 4% preferred audio, as shown in figure 5.

Figure 5. Android-Based Interactive Multimedia in Biology Education: Students' Perceptions (in percent)

According to students, interactive multimedia based on Android is intriguing, simple, and enjoyable. The interactive multimedia display powered by Android is more comprehensive than previous media. The use of interactive multimedia in biology teaching has a significant influence on the ability to achieve and

comprehend biology. However, 10% of students prefer to utilize audiovisual material since it is faster and shorter in delivery than multimedia, which must be accessed one by one. Meanwhile, 8 percent of students prefer to study biology through visual media since it is faster and more effective. While audio media received a 4% because students did not grasp the subject being presented. Students do not choose to utilize interactive media, which is due to the lack of availability or support for Android-based multimedia devices, as well as internet connection issues.

Nonetheless, this study is consistent with a study of all students in class XI MAN 2 Medan (Humairah et al., 2020), which found that student learning results using Android-based interactive multimedia are superior to students taught with internet-sourced multimedia. The validity and efficacy of increasing learning outcomes results demonstrate that android-based interactive multimedia may be used as a medium for learning materials.

CONCLUSION

Researchers attempted, in a broad sense, to characterize the perspectives of students towards the use of android-based interactive multimedia in the study of biology. According to the findings of perception, 67 percent of students have used interactive multimedia based on Android, 69 percent of teachers use audiovisual tools to transmit learning ideas, and 78 percent of respondents prefer utilizing interactive multimedia. This demonstrates that the utilization of interactive multimedia applications based on Android has the potential to increase both the quality and efficiency of biology education during the COVID-19 epidemic. As a consequence of the findings of this research, it is envisaged that it would be possible to take into consideration the process of designing multimedia for use in education. The utilization of interactive multimedia has also been shown in several studies to have a beneficial effect on the education of biological concepts. In order to aid educators in the process of building ideal learning environments, it is necessary to have supporting materials readily available. This research, on the other hand, is only based on a limited number of observations; thus, it has to be rebuilt, particularly in terms of the methodology and the number of respondents in subsequent research.

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