Learning Android-Based Multimedia for Contextualized Nonfiction Text Materials: A Needs Analysis

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ABSTRACT

The purpose of this study was to analyze the learning needs of android-based multimedia for contextual non-fiction text material in three elementary school, namely the Laboratory Primary School University of Nusantara PGRI Kediri, Primary School I Bendo Tulungagung, and Madrasah Ibtidaiyah Assalafiyyah Pule Kediri District Indonesia. Research data were collected through the distribution of questionnaires, interviews and observations. Based on the results of the research that has been done, it can be concluded that 87.2% of students are interested in learning to use applications on smartphones; 61.8% of students agree online learning using applications on smartphones. Judging from the needs analysis and paying attention to learning style tendencies, students who think positively about android-based multimedia are in the range of strongly agree, plus all students already have android devices, even though 20% of them are still joined by their parents.

Keywords: Analysis, Android, Multimedia, Nonfiction Text Materials.

I. INTRODUCTION

The rapid development of science and technology is always side by side with the development of education (Bulman & Fairlie, 2021; Chicioreanu et al., 2019; Siddiqui & Singh, 2016). Technology in education is very important for the delivery of knowledge that can facilitate the implementation of learning well. The development of technology and science is increasingly encouraging updates in the use of technological results in the learning process. Efforts to improve the quality of learning are by developing a learning system that is already student-oriented (student center) and facilitates the needs of students both challenging facilities and infrastructure, increasing student activity, creative, able to innovate, more effective and fun, as well as developing information and communication technology-based learning (Radyulii et al., 2020).

The development of technology makes learning to use technology so that in the development of the quality of learning it must always follow the times, as well as the supporting components of learning such as media, methods, models, and so on. So that technology in the learning process is needed in the learning process to be more effective, attractive, and students are fully actively involved in the learning process (Caron & Gely, 2004; Kadiyala & Crynes, 2000; Ratheeswari, 2018).

Therefore, at this time educators must be ready and more creative in the use of technology for learning. Interactive learning media is a multimedia that is equipped with the delivery of information and materials that can be controlled and operated by the user, in order to choose what will be run first according to the instructions (Sahronih et al., 2019). Now, the field of education continues to move dynamically, especially to create more interactive and comprehensive media, methods, and educational materials.

The use of the internet or applications in learning media has the potential to be implemented in the world of education (Babiker, 2015). The unique characteristics of the internet come from the nature of the media as a medium that can be spread globally in connecting people to share ideas and information, as well as connecting people with sites that store information, so that the media can be said to be developing in accordance with technological development.

The learning process cannot be separated from the use of the internet (Arsyad, 2015). This is adapted to the
development of technology and information in various parts of the world, therefore in the learning process, educators must be able to apply the Internet as a medium of learning.

Android is an operating system that is widely used and popular among smartphone users (Kaur & Sharma, 2014). Android provides an open platform for developers to create their own applications for use by various mobile devices, so the applications that can be used are very diverse (Nisarg & Rahila, 2010). One of the reasons Android has become a popular operating system, especially in the field of education, is the level of effectiveness and efficiency that is better than other similar programs (Li et al., 2014).

The number of internet users in Indonesia continues to increase every year. Based on the results of a survey by the Indonesian Internet Service Providers Association (APJII) in the 2021-2022 period, there are 210.03 million internet users in Indonesia. The internet penetration rate in the 5-12 age group is 62.43% (Bayu, 2022). Educators can use smartphones as an alternative to providing materials and questions, as well as organizing class problems in learning at home, besides that it can provide challenging learning and increase motivation very well.

Based on preliminary observations made by researchers, it can be seen that most students at the Kediri Regency Elementary School in Indonesia have the means to carry out online activities with smartphone devices. However, the learning media used are still conventional and minimal with the use of technology. Therefore, it is hoped that with the use of smartphone-based learning media, students can become more interested and feel challenged in the learning process. In addition, with the use of this android-based learning media, teachers and students become accustomed and able to follow any technological developments, so that both parties can understand, or evaluate as feedback on the success of the learning process and achieve learning objectives.

The purpose of this study was to analyze students' needs for interactive multimedia learning media based on Android in Indonesian subjects with non-fiction text based on local wisdom. This research is to analyze the need for developing interactive multimedia based on students and teachers.

Areas of analysis include (1) online learning process, (2) non-fiction text material, (3) student learning resources, (4) contextual learning by Kediri local wisdom material, (5) 4C skills (critical thinking, communication, collaboration, creativity and innovation), and (6) android-based multimedia learning.

II. METHOD

The research method used is descriptive qualitative method. This research was conducted in three elementary schools, namely the Laboratory Primary School University of Nusantara PGRI Kediri, Primary School 1 Bendo Tulungagung, and Madrasah Ibtidaiyah Assalafiyah Pule Kediri District. Research data were collected through the distribution of questionnaires, interviews and observations.

Needs questionnaire for students and interviews for teachers. Interview guidelines with classroom teachers were used to obtain information about the teacher's support for learning non-fiction text materials based on Kediri Raya local wisdom and 4C skills. Student questionnaires were used to find out students' views on the material that had been delivered by the teacher, regarding courageous learning tools, non-fiction texts, reading texts about local, and online learning using applications on smartphones. The data collected in this study is in the form of quantitative data. Then, the data will be analyzed descriptively qualitatively.

III. RESULT

The study began with observations of three elementary schools in Kediri, namely, the Laboratory Primary School University of Nusantara PGRI Kediri, Primary School 1 Bendo Tulungagung, and Madrasah Ibtidaiyah Assalafiyah Pule Kediri District. Observations were made by distributing needs analysis questionnaires to students, questionnaires, and interviews with classroom teachers.

There are six subjects that can be used as a foothold in developing Android-Based Interactive Multimedia Non-fiction Text Material Containing Kediri Local Wisdom and 4C Skills for Grade fourth Elementary School Students, namely, (1) Online learning process, (2) Non-fiction text material, (3) Resources student learning, (4) contextual learning by Kediri local wisdom materials, (5) 4C skills (Critical thinking, Communication, Collaboration, Creativity and innovation), and (6) Android-based multimedia learning.

A. Online Learning Process

80% of the online learning process can be followed by students, while the other 20% are constrained by the device. There are students whose devices are not yet android and some are damaged. 90% stated that the technology had been met, but there were obstacles regarding the stability of the internet network used during the learning process.

There are 78.2% of students have Android smartphone while others do not have Android smartphone. Whether it's the student's own smartphone or still joining the parents. There are 83.6% of students who often use Android smartphone while others rarely use smartphone. When Android smartphone online learning is a student need, there are 96.3% of students agree with this statement. Students stated that the Android smartphone makes it easy when participating in the online learning process, there are 94.5%.

B. Nonfiction Text Material

As many as 30% of teachers experience difficulties in terms of time constraints when delivering material on nonfiction texts. The teaching materials used to deliver non-fiction text materials are worksheets, books, and interactive videos.

As many as 43.6% of students stated that classroom teachers had used applications in smartphones for non-fiction text material during online learning. As many as 83.6% of students stated that the teacher explained the material of non-fiction texts in an easy-to-understand manner. As many as 40% of students still have difficulty in non-fiction text material. There are 50.9% of students have not understood the contents of the non-fiction reading text explained by the teacher. The questions given by the teacher on non-fiction text material are very difficult to understand, this is stated by 56.3% of students.
C. Student Learning Resources

Learning resources used by teachers for students are books and the internet. The number of students who experienced problems from the three schools was 14 students who were less interested in reading.

D. Contextual Learning by Kediri Local Wisdom Material

The teacher has explained non-fiction text material about stories in everyday life, 81.8% stated this. As many as 45.4% of students stated that they did not understand the contents of non-fiction texts about stories of everyday life.

E. 4C Skills

60% of students are interested in nonfiction text material in collaboration with the concept of 4C skills.

F. Android Based Multimedia Learning

The response of parents in learning non-fiction text material using Android-based multimedia is 80% of students' parents accept it, because it is more interesting for students to be enthusiastic about learning online, but parents who do not understand technology find it difficult.

As many as 74.5% of students stated that they had used an application on a smartphone in online learning. According to 85.4% of students, online smartphone applications are very fun. 56.3% of students feel interested in learning to use applications on smartphones on non-fiction text material about stories of everyday life. 65.4% of students stated that they prefer to learn to use applications on smartphones to understand the contents of stories of everyday life. 83.6% of students like to learn using applications on smartphones that are equipped with cartoon images according to stories of daily life. 60% of students like to learn using applications on smartphones that are equipped with music. 87.2% of students like to learn using applications on smartphones that are equipped with video explanations of non-fiction texts about stories of everyday life. 87.2% of students are interested in learning to use applications on smartphones and can be used anytime. 61.8% of students agree online learning using applications on smartphones so that they can master non-fiction text material about stories of everyday life.

IV. DISCUSSION

Analysis of the needs of elementary school students was carried out in three elementary schools in Kediri Raya, the Laboratory Primary School University of Nusantara PGRI Kediri, Primary School 1 Bendo Tulungagung, and Madrasah Ibtidaiyah Assalafiyah Pule Kediri District. This analysis was conducted to obtain information about the needs of elementary school students about learning non-fiction text material containing Kediri Raya local wisdom and 4C skills.

A. Online Learning Process

Based on the data above, it was concluded that students in the three schools made it possible to do online-based learning. Online learning helps ensure distance learning is manageable and students can easily access teachers and teaching materials, online learning reduces the use of travel resources and other costs, online learning facilitates administrative tasks such as marking attendance, through online learning students have become independent learners and they learn asynchronously at any time of the day (Mukhtar et al., 2020; Yuhanna et al., 2020). So, almost all students at the time of online learning really need a smartphone.

The teacher's efforts in online learning are fun and don't bore students by providing interesting media. The media used are books, power points, learning videos, quizzes, and WhatsApp groups. The teacher asks questions and does not give burdensome assignments.

B. Nonfiction Text Material

The teaching materials used to deliver non-fiction text materials are worksheets, books, and interactive videos. The obstacle in delivering non-fiction text material is that students have not been able to identify non-fiction texts even though they have been given examples of stories. Student response in learning is less interested in delivering non-fiction text material. Some of them argue that they still have difficulty in finding the main idea in nonfiction texts. The method used by the teacher in delivering non-fiction text material is using lectures, questions, and answers in learning.

Digital-based learning media for non-fiction text material can support the function of the media in conveying information and student understanding. Non-fiction digital text-based learning media can be one way to optimize experience as a student learning resource (Astutik et al., 2021; Herlina et al., 2019).

C. Student Learning Resources

Of the three elementary schools that have been observed, there are two elementary schools that provide multimedia-based learning resources and one elementary school that does not provide multimedia-based learning resources. Students in the three schools used multimedia for their learning. The number of students who have experienced problems from the three schools was 14 students who were less interested in reading. 87.2% of students are interested in learning to use applications on smartphones and can be used asynchronously at any time of the day (Mukhtar et al., 2020; Yuhanna et al., 2020).

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D. Contextual Learning by Kediri Local Wisdom Material

The three elementary schools have been given contextual material about local wisdom. Local wisdom taught to students is stories about history, regional culture, and regional specialties. Local wisdom is the values that are believed to be true by the community and become a reference in the daily behavior of the local community (Sumardjoko & Musyiam, 2018). The advantages of local wisdom that are close to the community are expected to help guide media to students easier. Through local wisdom, students can learn cultural values and a sense of nationalism that are beneficial to learning outcomes (Theresia et al., 2014).

E. 4C Skills

In online learning, non-fiction text materials regarding 4C skills have not been fully implemented due to time constraints. 60% of students are interested in nonfiction text material in collaboration with the concept of 4C skills. If today's students want to compete in this global society, they must have proficient communicator, creator, critical skills.
thinkers, and collaborators (4C) (Erdogan, 2019). Teachers must complete all of these subjects with 4C to prepare the younger generation of people for citizenship and a global workforce. In this case, it is non-fiction text material in Indonesian subjects.

F. Android Based Multimedia Learning

All fourth-grade students in the three schools above have smartphones, both their own and those of their parents. They can operate on their own. The need for Android-based interactive multimedia is urgently needed in accordance with the demands of 21st-century education, this technology is one of the solutions needed by current students (Ma’ruf et al., 2019).

V. CONCLUSION

Based on the results of the research that has been done, it can be concluded that 87.2% of students are interested in learning to use applications on smartphones, because they are easy and can be used anytime, then 61.8% of students agree on online learning using applications on smartphones so that they can master non-fiction text material about stories of everyday life. Judging from the needs analysis, paying attention to learning style tendencies, students who think positively about this media are in the range of strongly agree and agree, plus all students already have Android devices/mobile phones, even though 20% of them are still joined by their parents. Likewise, the school has provided supporting facilities and infrastructure for this Android-based learning media, but it has not been effectively used. The development of learning media is expected to make it easier for students to master teaching materials so that learning objectives can be achieved easily. Students do not have to access learning at school, but students can also access the media anywhere and anytime, through the Android media devices that students already have.

Finally, the development of interactive multimedia non-fiction text materials based on Kediri local wisdom and 4C skills is needed by fourth graders for the following reasons: (1) Learning based on Android smartphone has been implemented and students have smartphone; (2) The non-fiction text material presented by the teacher has not attracted students to be studied; (3) Student learning resources use books more often; (4) Local wisdom needs to be taught so that students know their area; (5) Students feel happy if learning is based on 4C.

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CONFLICT OF INTEREST

All authors in this article declare no conflict of interest.

REFERENCES


