The Role of Mobile Technology in Improving Accessibility and Quality of Learning

Liza Husnita 1, Arintina Rahayuni 2, Yenni Fusfitasari 3, Edy Siswanto 4, Ratna Rintaningrum 5

1 Universitas PGRI Sumatera Barat, Indonesia
2 Universitas Negeri Semarang, Indonesia
3 Sekolah Tinggi Ilmu Kesehatan Bhakti Husada Bengkulu, Indonesia
4 Universitas Negeri Semarang, Indonesia
5 Institut Teknologi Sepuluh Nopember, Indonesia

Corresponding Author: Liza Husnita, E-mail: lizahusnita1@upgrisba.ac.id

ABSTRACT

The development of information technology, especially in the form of mobile technology, has brought revolutionary changes in various fields of life, including education. The widespread use of mobile devices such as smartphones and tablets has opened up new opportunities for learning and significantly increased the accessibility and quality of learning. The purpose of this summary is to describe the important role mobile technologies play in improving the accessibility and quality of learning. With the help of descriptive methods and literary analysis, the positive effects of mobile technologies on learning are examined. First, mobile technology has broken down geographical and physical barriers to access learning. The ability to access learning materials and educational resources via mobile devices has opened the door to distance learning and self-study. Students can now study anywhere, anytime, increasing the flexibility of the learning process. Second, mobile technology enables the use of interactive and engaging learning applications and platforms. Many educational apps available online offer innovative learning methods such as educational videos, educational games and interactive quizzes. This helps increase student engagement and interest in the learning process, which has a positive impact on their motivation and academic performance. In addition, mobile technology enables more effective collaboration and communication between students, teachers and parents. With the help of communication apps and online learning platforms, teachers can provide real-time feedback, strengthen teacher-student relationships, and facilitate parental involvement in their children's academic development. However, this summary also highlights some of the challenges and concerns that need to be addressed when learning to use mobile technology. Issues such as unequal access to technology, the potential for distracting concentration due to distracting devices, and the importance of student data security and privacy need to be carefully considered. As we recognize the increasingly important role of mobile technology in education, we can take advantage of the opportunities and opportunities offered by this technological revolution to increase the accessibility and quality of
The Role of Mobile Technology in Improving Accessibility and Quality of Learning

With the integration of smart technology and the right support, mobile technology-based learning can become one of the main pillars of a more inclusive and innovative education in the future.

Keywords: Cellular Technology, Mobile Technology, Quality Learning

INTRODUCTION

Technology has become an integral aspect (Atangana & İğret Araz, 2021) of education, driving major changes in the way learning is approached, communicated and understood. Utilization of technology in learning (Beck et al., 2020) Educational technology or e-learning has brought many positive changes to the education process. Accessibility (Alsaeedi, 2020) greater technology in learning has transcended traditional geographical and infrastructural boundaries, allowing access to learning resources from anywhere, anytime. Students (Alhadabi & Karpinski, 2020) are no longer limited to the actual classroom environment, as course materials and educational content can be accessed via mobile devices (Schnauber-Stockmann & Karnowski, 2020), computer, or tablet connected to the internet. Online learning (Alghamdi et al., 2020) With technology, online learning models are becoming more feasible and popular.

Technology allows the use of multimedia (Qureshi & Megías Jiménez, 2020) in the learning process. Teachers can use images, videos, animations and sound to explain complex concepts in a more intuitive way (Shahzad et al., 2020) and engaging. In addition, this technology also enables interactive learning through simulations, educational games, etc. (Jaloustre, 2022), and other online activities, thus increasing student engagement and understanding. By using technology, learning methods (Da’u et al., 2020) can be customized according to the needs and interests of each student. Intelligent learning system (Javed, Fahad, et al., 2021) using data and analytics to identify students' weaknesses and strengths, so they can receive additional materials or instruction accordingly.

Technology facilitates (Liu et al., 2020) collaboration between students and teachers around the world. Students can participate in joint projects, discuss in online forums (Sarker et al., 2022), and share ideas with peers outside of the actual classroom environment. This creates a learning experience (Feigin et al., 2021) that are richer and more varied. (Sestino et al., 2020) The internet has become an unlimited source of learning. Students and teachers have access to a wide range of materials (Kitanovski, 2020) courses, digital textbooks, academic journals (Malik et al., 2020), and other educational content that expands their knowledge and understanding. Although technology in learning (Theobald et al., 2020) offers many benefits, there are also challenges to overcome, such as uneven internet access, data privacy (Bleier et al., 2020), and the digital divide. important for educators (Sarker et al., 2022), students, and
other stakeholders to wisely apply technology in learning and address issues that may arise to maximize its benefits in learning. improve quality (Sá et al., 2020) education as a whole.

Mobile technology (Andujar et al., 2020) has made its presence felt in various aspects of human life. One area where mobile technology plays an important role is in education. The development of mobile technology has had a positive impact (De Meester et al., 2020) on improving accessibility and quality of learning. Accessibility is one of the most important elements in education, especially in developing countries or remote areas of the world. With mobile technology, accessing (Demirgüç-Kunt et al., 2020) learning resources have become easier. Thanks to smartphones (Javed, Faheem, et al., 2021), tablets, and other mobile devices, students and teachers can now access information, course materials, and more. (Branch, 2020), and educational content from anywhere at any time. No longer bound by geographical limitations or educational infrastructure (Demintseva, 2020) and educational content from anywhere at any time.

No longer bound by geographical limitations or educational infrastructure (Alencar et al., 2020) online learning, and digital learning resources (Correani et al., 2020), learning process becomes more interactive and fun. Mobile technology enables the use of multimedia, gamification (Ferriz-Valero et al., 2020), and other interactive content to facilitate better understanding of the subject. Teachers can also find learning tools and resources (Mahmood & Wang, 2021) innovative educational applications to provide students with richer and more engaging learning experiences. In the context of inclusive education (Kuyini et al., 2020), Mobile technology has opened up opportunities for students with special needs. Application (Ahmed et al., 2021) and mobile devices can be customized to support learning for people with learning disabilities or physical difficulties. By using mobile technology, education becomes more personalized (De Barcelos Silva et al., 2020) and accessible to all individuals regardless of boundaries.

Mobile technology to improve accessibility and quality of learning (Medeiros et al., 2020), should also be aware of the ethical challenges and considerations associated with the use of mobile devices. Data privacy, digital security (Ali et al., 2021), and dependency on technology are some of the issues that need to be carefully considered when integrating mobile technology into education. So, in this introduction, we recognize the important role that mobile technology plays in opening doors of opportunity for more inclusive and quality education. The continuous evolution of this technology has great potential to advance the global education system (De Figueiredo et al., 2020) and equip future generations with knowledge and skills relevant to the digital age.

Some previous researchers' opinions on the role of mobile technology in improving accessibility and quality of learning. According to Mukhid, M. P. (2023) that shows that mobile technology, such as smartphones and tablets, has significantly improved access to education. Through mobile devices, students can access various learning resources, such as learning materials, videos, educational applications, and e-books, anytime and anywhere. This allows them to learn independently and flexibly
without being constrained by time and space, making it easier for students from various backgrounds to access quality education. Secondly, according to Ibrahim, N., & Ishartiwi, I. (2017) that the use of mobile technology in learning has been proven to have a positive impact in increasing student engagement and attachment. Through mobile learning apps and platforms, teachers can design engaging and interactive content that actively involves students in the learning process. With elements such as educational games, quizzes, and online discussion forums, students are more interested and engaged in the subject matter, which improves their ability to understand and retain information. Third, according to Saputri, D. S. C. (2017) mobile technology enables personalized learning. By using adaptive learning tools and applications, teachers can understand the individual needs of each student and provide learning materials that match their level of understanding and interest. This personalized learning method increases the effectiveness of learning, as students will focus more on the material that is right for them, increase their motivation to learn, and overcome learning difficulties more effectively.

The purpose of this research is to examine the role of mobile technology in improving the accessibility and quality of learning. The purpose of this research is to determine the impact of using mobile technology in an educational context. By understanding the impact, researchers can assess the role of mobile technology in improving accessibility and quality of learning for students. And to measure the effectiveness of using mobile technology in the learning process. Through this study, researchers can find out whether or not the use of mobile technology has significant benefits in improving students' understanding, engagement in the learning process, and overall achievement of learning outcomes. Therefore, this research will provide new insights into how mobile technology can play a role in improving accessibility and quality of learning, as well as provide a basis for future learning, development of more adaptive and innovative methods.

RESEARCH METHODOLOGY

The method used in this research is quantitative method. Quantitative research methods (King et al., 2021) This method produces data in the form of numbers obtained by filling out surveys on google forms and provided to students as research subjects. In addition, this quantitative method produces systematic, planned, and structured research. This quantitative research method is widely used in research. This quantitative method is defined as the process of discovering a phenomenon in a systematic and real way by collecting information, then measuring it and confirming the truth by filling out questionnaires and interviewing stakeholders. This research is mostly done through statistical research(Lindl et al., 2020) where quantitative data is collected through research studies. This quantitative research method provides information that is truly accurate and realistic because the end result is in the form of numbers.

The type of research is a test whose purpose is to test the use of artificial intelligence in future education management. The researcher's data collection technique
is to search for and collect factual and current information on the spot. Data collection at observation points is a quantitative research data analysis technique. When analyzing data, one does so by describing and characterizing the information collected, without changing the source of the information obtained. The first step of this quantitative research is to find the root of the problem or formulate the problem, then conduct a literature review, determine the hypothesis, determine the method to be used, determine the instrument or research tool, and conduct data analysis and finally draw conclusions.

RESULT AND DISCUSSION

The development of technology, especially mobile technology, has brought many changes in various aspects of human life, including in the field of education. With the advancement of mobile technology, the accessibility and quality of learning has improved dramatically. Mobile technology provides flexible and accessible learning anytime, anywhere. Pupils and students are no longer restricted by time and limited traditional classrooms. With mobile devices such as smartphones or tablets, learning materials can be accessed through e-learning platforms or educational apps, so learning can happen according to everyone's schedule and skill level. Mobile technology makes distance learning (e-learning) more effective and accessible. Students and college students can attend lectures or classes given by teachers or lecturers without having to be in the same location. This is especially beneficial for those who live in remote areas or who have physical limitations that prevent them from attending classes.

With mobile technology, it becomes easier to access different learning resources. Many educational apps, e-book platforms, learning videos, and other interactive learning resources are available in the palm of your hand. This allows students and learners to gain a deeper understanding of a particular topic through various sources, thus enhancing the quality of their learning. Mobile technology enables interaction and collaboration between students, students, teachers and faculty. Online learning apps and platforms offer features such as discussion forums, virtual learning groups and live chats that enable the exchange of ideas and support between students and educators. This type of collaboration can improve understanding of the material and enrich the learning experience.

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The use of mobile technology makes access to education easier</td>
<td>50%</td>
<td>45%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>The existence of mobile technology makes it easier for teachers to determine the right way of learning</td>
<td>60%</td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>Mobile technology provides flexible</td>
<td>55%</td>
<td>35%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>The Role of Mobile Technology in Improving Accessibility and Quality of Learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Mobile technology is very necessary in the world of education which requires continuous development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Motivated students in doing the learning taught by the teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Students are motivated to find out creative and innovative knowledge to support intergenerational competition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The use of mobile technology if appropriate and accurate will advance all aspects of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Students are not limited by time and limited classrooms by using mobile technology.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>With mobile technology such as smartphones or tablets, learning materials can be accessed through e-learning platforms or educational applications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Ease of learning will be achieved if mobile technology is well utilized by educators.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Mobile technology makes distance learning more accessible and effective.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Learning objectives can be achieved by maximizing by using this mobile technology well</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Students' proficiency in critical thinking and understanding related to various learning can be resolved</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Learning is more fun and conducive when using this mobile technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Mobile technology makes it easier to access learning resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the table above, there are several statements from several questions in the problem-based learning strategy to improve problem-solving skills by well-educated students. The statements generated from some of the questions are very helpful for researchers in researching the use of this strategy for education in schools. The 15 questions tested contained a number of statements about the role of mobile technology in improving the accessibility and quality of learning. The benefits of this mobile role can be maximized properly. So that the world of education can develop rapidly with amazingly accurate and reliable results for the desired progress. Not only that, technology for primary and secondary level students and even colleges. The statement containing that the use of mobile technology makes access to education easier, obtained a percentage of 50% in the strongly agree category. Meanwhile, a percentage of 45% in the agree category, in the disagree category obtained a percentage of 3%, and a percentage of 0% in the strongly disagree category.

The statement that the existence of mobile technology makes it easier for teachers to determine the right way of learning, obtained a percentage of 60% in the strongly agree category. Whereas in the agree category, it obtained a percentage of 50%, for the disagree category, it got a percentage of 0% and so did the strongly disagree category get the same percentage of 0%. The statement that mobile technology provides flexible learning and can be accessed at any time received a percentage of 55% in the strongly agree category. While in the agree category, the percentage is 35%, for the disagree category, the percentage is 5% and in the strongly disagree category, the percentage is 3%. Furthermore, the statement stating that mobile technology is indispensable in the world of education which requires continuous development, obtained a percentage of 75% in the strongly agree category. As for the agree category, it gets a percentage of 45%, for the disagree category it gets a percentage of 10% and finally in the strongly disagree category it gets a percentage of 0%. In the statement Motivated students in doing the learning taught by the teacher got a percentage of 60% in the strongly agree category. While in the agree category it gets a percentage of 50%, for the disagree category it gets a percentage of 0% and in the strongly disagree category it gets a percentage of 0%.

Furthermore, the statement stating that students are moved to find out creative and innovative knowledge to support competition between generations, obtained a percentage of 50% in the strongly agree category. While in the agree category, the percentage is 50% as well, for the disagree category, the percentage is 4% and finally in the strongly disagree category it gets a percentage of 0%. The statement stating that the use of mobile technology, if appropriate and accurate, will advance all aspects of education, obtained a percentage of 40% in the strongly agree category. Meanwhile, for the agree category, the percentage is 55%, for the disagree category, the percentage is 2% and the strongly disagree category gets a percentage of 0%. Furthermore, the statement stating that students are not limited by limited time and classroom space by using mobile technology, obtained a percentage of 70% in the strongly agree category. Meanwhile, in
The role of mobile technology in improving accessibility and quality of learning

The agree category, it obtained a percentage of 40%, for the disagree category obtained a percentage of 0%, and the strongly disagree category obtained a percentage of 0%

The statement stating that with mobile technology such as smartphones or tablets, learning materials can be accessed through e-learning platforms or educational applications, received a percentage of 65%. While in the agree category, the percentage is 45%, for the disagree category, the percentage is 0% and for a percentage of 0% also in the strongly disagree category. Furthermore, the statement that convenience will be obtained in learning if the role of mobile technology is good by educators, obtained a percentage of 55% in the strongly agree category. Meanwhile, for the agree category, the percentage was 45%, for the disagree category, the percentage was 0%, as well as a percentage of 0% in the strongly disagree category. The statement that mobile technology makes distance learning more accessible and effective, obtained a percentage of 65% in the category strongly agreeing with the statement given. While in the agree statement, it obtained a percentage of 35%, for the disagree category obtained a percentage of 3% and for the strongly disagree category obtained a percentage of 0%. This proves the abundant benefits for many people.

Furthermore, the statement that learning objectives can be achieved by maximizing by using this mobile technology well obtained a percentage of 70% in the strongly agree category. As for the agree category, it obtained a percentage of 50%, for the disagree statement obtained a percentage of 0%, as well as the strongly disagree category obtained a percentage of 0%. The statement that students' skills in critical thinking and understanding related to various learning can be overcome, obtained a percentage of 30% in the strongly agree category. While in the agree category, the percentage was 75%, for a percentage of 0% in the disagree category and also strongly disagree obtained a percentage of 0%. Finally, the statement Learning is more fun and conducive when using this mobile technology, obtained a percentage of 55% in the strongly agree category. As for the agree category, it gets a percentage of 70%, for the disagree category it gets a percentage of 2% and for the strongly disagree category it gets a percentage of 0%. All of these statements show the results that the role of mobile technology in improving the accessibility and quality of learning is indeed needed.

With mobile technology, the process of assessment and response to learning outcomes can be done quickly and efficiently. Teachers and lecturers can issue assignments and exams online, and return the results directly to students without having to wait long. This helps students immediately improve their understanding and adapt to the learning process. While mobile technology has many benefits to improve the accessibility and quality of learning, it is important to remember that its use must be wise. The incorporation of mobile technology into the learning process must be carefully planned and appropriately supervised in order to have the maximum positive impact on students. Mobile technology makes it easier for students and teachers to collaborate. They can join virtual study groups, discussion forums or group projects through online learning platforms. Such cooperation expands social networks and
facilitates the exchange of ideas, views and information among students, which in turn can improve the quality of learning through shared learning and group support.

The result of this research is the role of mobile technology in improving the accessibility and quality of learning. With mobile technology, access to education becomes easier and more equitable. Students in remote areas or areas with limited mobility can access learning materials through mobile devices. This reduces the access gap and provides more opportunities for everyone to receive quality education. Mobile devices enable flexible learning in terms of time and place. Students, no longer tied to a physical schedule, can organize their learning time according to their needs and interests. Learning can be done at home, while traveling, or anywhere that is convenient for the individual, allowing them to remain productive even outdoors. Mobile technology provides access to many learning resources. Pupils and students can access eBooks, learning videos, interactive content, and educational apps that enhance their understanding of the subject. The availability of various learning resources improves the quality of learning and makes learning more fun and enjoyable.

The research examined the role of mobile technology in improving the accessibility and quality of learning. Evidenced by several statements distributed through questionnaires, then researchers present them through tables so that they are easy for readers to read and understand. The method used in this research is a quantitative method that uses numbers or numerics that contain numbers in it that are accurate and reliable. This research method is obtained by collecting all the many data obtained by researchers by going directly to the research location, namely at school. When directly at the research site, the researcher tries to explore his research to get valid data. By using this quantitative method which contains accurate original data, researchers can explain in detail how much data has been researched in the field correctly and according to the actual facts that exist. This method also makes it easier for researchers to create scientific papers using tables containing statements about the effectiveness of the role of mobile technology in improving the accessibility and quality of this learning. The results obtained from this statement are also explained through the explanation after the use of the table, so that it can be seen easily by the reader.

The purpose of this study is to assess the extent to which mobile technology can extend the reach of learning and reduce geographical barriers for students. Evaluate the effectiveness of various mobile applications and platforms in increasing student engagement and involvement in the learning process. Identify the role of mobile technology in making learning accessible to students with special needs or disabilities. Measure the improvement in the quality of learning that results from integrating mobile technology into the school curriculum. Investigate teachers' perceptions and responses to the use of mobile technology in classroom management and teaching. Provide recommendations to schools and government to implement mobile technology as a means to improve access and quality of learning. This research will help to better understand how to effectively use mobile technology to improve accessibility and quality of learning.
CONCLUSION

Based on the discussion above, it can be concluded that the use of mobile technology has successfully increased the accessibility of learning for students, especially in overcoming geographical barriers and physical limitations. Students can access learning materials and supporting resources through their mobile devices from anywhere and anytime. The integration of mobile technology in learning has also increased student participation and interaction in the teaching-learning process. Mobile applications and platforms provide a more engaging and interactive way to deliver materials, so students tend to be more engaged and motivated. Mobile technology also provides great benefits for students with special needs or disabilities. Enhanced accessibility and various accessibility features in mobile applications help students with various learning challenges to overcome barriers and participate in learning more effectively. The successful implementation of mobile technology in learning is highly dependent on teacher support and involvement. Teachers who are skilled in using these technologies are able to create more effective and engaging learning experiences for students.

REFERENCES


The Role of Mobile Technology in Improving Accessibility and Quality of Learning


Copyright Holder:
© Liza Husnita et al. (2023)

First Publication Right:
© AL-FIKRAH: Jurnal Manajemen Pendidikan

This article is under:

© Creative Commons Attribution 4.0 International License