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Utilization of Digital-Based Learning Media for Early Chilhood Education in Padangsidimpuan City

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Abstract This study is motivated by the fact that digital-based learning has become an integral part of educational transformation, especially at the early childhood education level. However, implementation of digital-based learning has challenges, such as unequal access, teacher incompetence, and negative effects on student health. The aim of this is to determine digital-based learning media for early childhood education in Padangsidimpuan City. The method used is qualitative and descriptive. The research results show that digital learning allows increasing educational accessibility, increasing student participation, and diversifying learning approaches. Therefore, a holistic approach is needed to overcome these challenges, including digital skills training, health impact management, and understanding local values in digital learning. Digital learning has the potential to improve educational access and engagement.

Keywords: Digital Based Learning, Educational Transformation, Technology Implementation, skills, early childhood,

INTRODUCTION

Education is the main foundation in forming a competent adaptive generation in this digital era, this is stated at this time, the role of digital-based learning media has become an important catalyst in optimizing the learning process. With the emergence of

technology, teachers and students can gain wider access to information, making learning more. dynamic and relevant. According to that the use of this technology not only shifts the paradigm of conventional learning, but also opens up new opportunities to bring education closer to current developments.(Rahma, Harjono, and Sulistyo 2023)

Digital learning includes hardware aspects (infrastructure) in the form of a set of computers that are interconnected with each other and have the ability to send data, either in the form of text, messages, graphics, video or audio. With this capability, digital learning can be interpreted as a computer network that is interconnected with other computer networks all over the world. that digital learning is a form of information technology that is applied in the field of education in the form of cyberspace or can also be called E-learning. (Khaironi and Ramdhani 2017)

The term digital learning is more appropriately intended as an effort to create a transformation of the learning process in schools or universities into a digital form that is bridged by Internet technology. Digital learning can also be defined as a learning process that is carried out through a network (computer network), usually via the internet or intranet. With the internet, digital learning does not continuously depend on teachers because wider and more complete access to information (knowledge) allows students to learn anytime and anywhere they want.(Azizan, Lubis, and Muvid 2020)

There are 3 types of digital learning that can be utilized in everyday life, namely:

1) Potential Communication Tools

Digital learning allows you to communicate quickly anywhere, such as via email or talking via chat and mailing lists.

2) Potential Access to Information

Through digital learning, various information can be accessed, such as weather forecasts, economic, social, political, cultural, scientific, and technological developments presented by various sources without having to subscribe.

3) Potential for Education and Learning

The development of digital learning technology which is very rapid and has spread to all corners of the world has been utilized by many countries, institutions, and experts for various interests including education and learning.

Even so, the development of digital-based learning media is not free from a number of problems. Limited accessibility, technological disparities in various regions, and challenges in integrating technology into the curriculum are some of the obstacles faced. In facing these challenges, innovative solutions are needed so that the benefits of digital-based learning media can be enjoyed equally by all levels of society, including in the implementation of early childhood education.(James Saragih 2021)

It is undeniable that the early period of a child's life is an important period in a person's development. The golden age is between the ages of 0 and 6 years. In this generation, children learn a lot from their environment. The knowledge and education that children receive today greatly influence their future because their brain growth experiences extraordinary development and develops very significantly. The learning process from an early age is expected to make children ready to enter further education. More importantly, this is expected so that children receive physical, cognitive, social, and emotional stimulation that is appropriate for their age.(Sitepu n.d.)

Learning activities are basically a communication process. The communication process will run well if the learning messages conveyed by the teacher can be well received by the child, so educators need media as a communication tool. The use of learning media in PAUD is very helpful in improving children's understanding because children will think concretely.(Nasution 2015)

According to the findings, ten percent of information is absorbed from reading activities, twenty percent from listening activities, thirty percent from viewing activities, fifty percent from viewing and listening activities, seventy percent from spoken pronunciation, and ninety percent from actions and pronunciations. The results show that if visual or audio-visual media are used to help early childhood absorb information visually and by listening, their learning will be effective.(Afandi, Siregar, and Indriani 2023)

The development of digital technology today such as telephone users, multimedia computers, the internet and other audio-visual media for learning. Usually early childhood is always interested in.

METHOD

The focus of this study is to analyze and explain digital learning tools for early childhood in Padangsidimpuan City. This study uses a descriptive analysis method. Descriptive analysis is an empirical study that studies a particular symptom or phenomenon in a real-life context. Primary and secondary data are used to produce the findings of this study.(Lubis et al. 2021)

The approach used in this study is a qualitative approach. A qualitative approach is a research procedure that produces descriptive data in the form of written or spoken words from people and observable behavior by transcribing data, then coding the notes in the field and interpreting the data to obtain conclusions.

This study uses a qualitative research method. This method is adjusted to the main objective of the study, which is to explain and analyze digital learning media for early childhood education in Padangsidimpuan City. to explain research problems in this way.(Husna and Suryana 2021)

Determining the right data collection technique greatly determines the scientific truth of a study. The data collection techniques used in this study are Observation, Interviews and Documentation.

Technique can be seen as a means of doing technical work carefully using the mind to achieve goals. Although the study is actually an effort within the scope of science, it is carried out to collect data realistically and systematically to realize the truth.(Dewi, Mayasarokh, and Gustiana 2020)

Research methodology is a means of finding a cure for any problem. In this case, the author collects information about the analysis of digital-based learning media for early childhood education in Padangsidimpuan City from books, articles, journals, theses, theses, ebooks, and others. Because it requires materials from the library for its

data sources, this study utilizes library research. Researchers need books, scientific articles, and other literature related to the topics and problems they are exploring, both printed and online.(Suryani, Yuniarni, and Miranda n.d.)

Finding information from data sources requires the use of data collection techniques. Claiming that data collection is an effort to collect information related to the subject matter being studied. The author uses library research methods to collect data. Specifically, the author starts with the library to collect information from books, dictionaries, journals, encyclopedias, papers, periodicals, and other sources.

Observation is part of the direct research process on the phenomena to be studied. With this method, researchers can see and feel directly the atmosphere and conditions of the research subjects. The things observed in this study are about the analysis of digital-based learning media for early childhood education in Padangsidimpuan City. The interview technique in this study is a structured interview, namely an interview conducted using various standard guidelines that have been set, questions are arranged according to information needs and each question needed to reveal each empirical data.(Eliza et al. 2022)

Documentation is one of the data collection techniques through existing documents or written records. Documentation comes from the word document, which means written goods. In implementing the documentation method, researchers investigate written objects, such as books, magazines, meeting minutes, and diaries. According to Moleong in that the documentation method is a way of collecting information or data through testing archives and documents. The documentation strategy is also a data collection technique submitted to the research subjects. The method of data collection using this documentation method is carried out to obtain data on the condition of the institution (research object), namely digital-based learning media for early childhood education in Padangsidimpuan City.

States that data analysis is an activity of conducting, searching for and compiling systematic records of findings through observation and interviews so that researchers

focus on the research they are studying. After that, make a finding material for others, edit, classify, and present it.(Anggraini 2021).

RESULT AND DISCUSSION

Digital-based learning is a term used in. This is a learning approach that uses digital technology as the main tool in the process of transferring knowledge and skills. This technology can include hardware (such as tablets, computers, and projectors) and software (such as interactive learning applications, online platforms, and digital content). This method not only includes the use of software and hardware, but also changes the approach to education. This results in a more dynamic learning environment that is responsive to students' needs.

Digital-based learning allows students to learn through a variety of media, such as images, audio, video, and interactive simulations. This provides an opportunity for teachers to present learning materials in a way that is more interesting and relevant to students' individual learning styles. In addition, the interactivity of digital technology allows for two-way communication, facilitates collaboration between students, and strengthens student involvement in the learning process.(Zr and Eliza 2020)

In the context of PAUD and basic education, digital-based learning is key to preparing the younger generation to face the demands of an increasingly digitalized world. Therefore, a deep understanding of this concept is important so that its application can have a positive impact on children's learning at this level.(Hermawati and Sugito 2021)

That digital learning media includes various forms of technology used to support and enhance the learning process. Herman in explaining several types of digital learning media that are generally used at the PAUD level:

1. Educational Applications: Educational applications are specifically designed to provide an interactive and engaging learning experience. These applications can cover a variety of subjects and skills, and are often designed to motivate students through game elements or challenges.

2. Learning Videos: Digital learning videos allow teachers to deliver lesson materials through audiovisual media. This can include animated videos, slide presentations, or lecture recordings. Videos can be accessed by students flexibly, allowing them to learn at their own pace

3. E-Books and Digital Materials: Electronic books (e-books) and digital materials provide a digital alternative to traditional printed books. These materials can often be tailored to individual learning needs, and some e-books are equipped with interactive features, such as quizzes or links to additional resources.

4. Educational Games and Simulations: Educational games and simulations are designed to allow students to learn through interactive experiences. They can include scientific simulations, math games, or other critical skills games that support the learning of specific concepts.

5. Online Learning Platforms: Online platforms provide virtual learning spaces where teachers and students can interact, access learning materials, and participate in collaborative learning activities. Some platforms even provide tools to measure progress and facilitate online discussions.

6.Educational Podcasts: Educational podcasts provide audio learning resources that students can access anywhere. They can include interviews, lectures, or in-depth discussions on a particular topic. Choosing the type of digital learning media that suits the needs and learning objectives can provide a more diverse and enjoyable learning experience for students.

The integration of technology in education has a significant impact on various aspects of learning as explained by Rukmana et al in. Here are some of the main roles of technology in improving the quality of learning at the PAUD and elementary education levels.

1. Access and Flexibility: Technology allows wider access to educational resources. With digital devices and internet connections, students can access learning materials anytime and anywhere, overcoming geographical and temporal barriers.

2. Personalization of Learning: Technology allows personalization of learning according to individual learning needs and styles. With adaptive learning applications and online platforms that provide customized content, each student can follow a curriculum that suits their level of understanding and ability.

3. Interactivity and Engagement: Interactive tools such as educational software, simulations, and educational games increase student engagement. The use of interactive technology can make learning more interesting and fun, encouraging active participation and better understanding.

4. Evaluation Progress: Technology makes it easier to evaluate and monitor student progress. Online learning management systems can provide real-time information on student progress, allowing teachers to provide faster and more accurate feedback.

5. Technology Skills Development: Education that integrates technology helps students develop technology skills that are essential for success in the digital age. They learn not only as consumers of technology, but also as makers and innovators.

6. Online Collaboration: Technology facilitates collaboration between students and teachers without being limited by physical boundaries. Through online platforms, students can participate in joint projects, discussions, and other collaborative activities that enrich the learning experience.

7. Improving the Quality of Teaching: Teachers can leverage technology to improve the quality of their teaching. With access to digital educational resources, teachers can present materials in more innovative ways and adapt learning approaches according to student needs. The use of technology in education is not just about introducing hardware or software, but also about shifting the learning paradigm towards a more inclusive, responsive, and adaptive approach to the needs of learners in the digital age.(Zati 2018)

The use of educational applications not only enriches the learning experience but also teaches students to use technology as an effective learning tool. With creativity in using this application, educators can increase the efficiency and effectiveness of the learning process.(Rusdawati and Eliza 2022).

CONCLUSION

Based on the results of the research and analysis that have been described previously, it is concluded that digital-based learning for PAUD brings various positive potentials, such as increasing accessibility, student engagement, and diversifying learning methods. However, its implementation is also faced with a number of challenges, including infrastructure accessibility, inequality in teacher skills, and the risk of negative impacts on health. The importance of improving digital literacy of students and teachers, providing adequate training, and ensuring equal access to technology are the keys to the success of implementing digital-based learning. The use of technology must be balanced with attention to students' physical and mental health, so that negative impacts such as eye fatigue, lack of physical activity, and social isolation can be minimized. The suggestion in this study is that in designing and implementing digital-based learning, it is also necessary to prioritize the values of wisdom that promote critical and creative skills. Thus, digital-based learning can be an effective tool in improving the quality of early childhood education and basic education, in accordance with the demands of an increasingly digital era.

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