# UTILIZATION OF TECHNOLOGICAL DEVELOPMENTS AS LEARNING MEDIA IN ELEMENTARY SCHOOL

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**Abstract:** The development of technology brings significant changes in learning media. This study aims to examine the utilization of technology-based learning media in elementary schools at this time.. In the ever-evolving digital era, technology becomes a key tool in facilitating more effective, interactive and engaging learning. It also explores the impact of technology-based learning media utilization on students' learning and academic achievement. The method used in this article is a literature study or literature review. The results of this research are expected to provide insights in the context of learning, media is used to convey messages between teachers and students. The learning process involves teachers as message senders, learning materials as message content, learning media as message conveyors, students as message receivers, and learning objectives. Audio-visual media, such as multimedia, provides a more interactive and interesting approach for students. However, problems arise regarding teachers' competence in utilizing technology. The selection of learning media plays an important role, influenced by funding factors, learning materials, student characteristics, and appropriate media types.. In the era of increasingly interactive education, teachers must improve their technological literacy. Effective learning media can improve the quality of learning, make it more interesting and provide a betterlearning experience.

**Keywords:** Technology Development, Learning Media, Elementary School

## INTRODUCTION

At present, the development of technology has progressed very rapidly, including in the field of education, is also increasing. The symbol "e" which symbolizes electronics has been widely used and applied in various fields, including e-education, e-government, e-learning, and so on. In this context, the role of teachers when applying information and communication technology effectively has a very important value. This has the aim of providing a better understanding to the younger generation regarding the use of technology in a more appropriate and useful way. As said by Malik Fadjar, an education expert, managing a school or college basically means managing the future. Therefore, the task of educational institutions is not only to focus on maintaining and preserving the traditions of society, but also to present a pattern of education that is able to face global challenges. Because globalization is a dynamic reality (Firmadani, 2020). In this

**International Conference on Teaching and Learning** Proceeding
Faculty of Education and Teacher Training – Universitas Terbuka
UTCC, South Tangerang, Banten, November 18th 2023
Vol. 1, pg. 37 - 46
ISSN 3046-594X

situation, education needs to make innovations in the education structure in order to obtain effectiveness and achievement when carrying out the education process. All parties who will be involved, starting from teachers, students, policy makers, to the curriculum, need to work together in a system known as educational technology (Akbar, 2019).

The introduction of digital technologies affects learning as it provides new opportunities for learning and influences pedagogical approaches to teaching and learning. Indeed, the integration of technology into teaching requires teachers to modify their pedagogical approaches and teaching strategies, which determines the extent to which the use of technology improves students' cognitive outcomes The potential of digital technologies for teaching and learning does not primarily depend on the type of technology or the frequency of its use, but rather on how digital technologies are used to stimulate and cognitively engage students in learning activities (wekerle, 2020).

According to Backfisch et al. (2021) the quality of technology integration can be operationalized as the extent to which technology is used in order to change and reinterpret the learning implementation process as well as the level of teaching quality that understands specific task strategies (such as cognitive activation, and learning support), and general task-strategies (such as classroom management). In the context of learning, technology plays a very important role. Through science, students are taught about natural phenomena and facts, and technology allows humans to apply this knowledge practically (Rahardian, 2017).

However, in the face of technological advances, teachers need to make efforts to introduce technology to students in the learning process across all subjects at school. This poses a new challenge, namely how teachers can implement technology in schools in order to achieve the expected goals. In the field, there are several obstacles caused by the lack of computer facilities and the lack of teacher competence in using technology in learning activities. On the other hand, technology can make education easier and can provide positive benefits, but it also has the potential to be used negatively in an educational context.

In the world of education, the use of technology has produced many new innovations to support a process in learning activities. One of them is the increasing use of learning media that uses technology, thanks to the rapid development of technology. With the development of technology at this time, all parties in the world of education are required to be able to balance and be able to keep up with technological advances that exist at this time, currently the environment around us has been influenced by technology where there is a virtual world network or internet that can have an impact on other developments, especially within the scope of the world of education. Which is where the internet itself in the world of education as a supporter of the learning process (Budiyono, 2020). Learning media has two characteristics, namely as a distributor and as an information provider. Meanwhile, the principle of using learning media is effective and efficient, helps in shortening the time for material delivery activities in learning and can stimulate the imagination of educators when getting factual information through the media. Learning media itself is designed to be able to present in a concrete way something abstract The function of learning media is manipulative, allowing educators to visually describe something from an abstract to a concrete form (Budiyono, 2020).

Especially in the learning process in elementary classes requires supporting facilities and infrastructure, one of which is learning media. The use of media is expected

**International Conference on Teaching and Learning** Proceeding
Faculty of Education and Teacher Training – Universitas Terbuka
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to increase maximum learning outcomes (Taufiq, 2014: 140). Media intervention, if followed by the right method, benefits student competence and learning interactions and affects the way students process information from the teacher. If the learning process utilizes media, there are many positive contributions, including saving time in explanation, increasing interest in learning, attracting attention, clarifying ideas, clarifying concepts, and strengthening student memory (Naz & Akbar, 2008: 36). In addition, learning media is a means of conveying information about learning concepts that are very well received (Sari & Setiawan, 2018: 101). Media utilization was actually created to avoid verbalism, free students from the tyranny and trend of being objectified by teachers, and open the veil of dominative-exploitative teacher perceptions. Many studies prove that media utilization changes the learning paradigm, in the sense that the status of students from objects to the main part of learning and this can increase student confidence so that the implications in learning are very pronounced: activities run participatory, collaborative, and interactive (Wahyu, 2020).

By utilizing the function of learning media appropriately, it will determine how the teacher views when using media during the learning process for students, both as a strategy and during the process of delivering material in the process of teaching and learning activities. Seeing from the previous explanation, the purpose of this article is to examine the utilization of technology-based learning media in elementary schools today.

**METHOD**

The method used in this article is *library* research. Literature. Library research or literature review (literature review, literature research) is research that examines or critically reviews the knowledge, ideas, or findings contained in the body of academic-oriented literature, and formulates its theoretical and methodological contributions to certain topics (Nana Syaodih: 2009). The data used in this research is secondary data. Secondary data is data obtained not from direct observation, but data obtained from the results of research that has been conducted by previous researchers. The secondary data source in question is in the form of study results from journals obtained from e-journals, Google Scholar and Scopus. Then identify the data according to what is needed in the research. After that, grouping the data is done to make it easier to assemble scientific papers and not forget to do the analysis. Furthermore, by approaching the analysis to be able to find answers to research problems. The results of the research are in the form of a report by writing a scientific narrative.

**RESULT AND DISCUSSION**

Etymologically, learning media is divided from two words, namely media and learning. The term media comes from Latin, which is the plural form of the word "medium" which literally means an intermediary or messenger from the message source to the message receiver (Djamarah, 2010). The role of learning media in the learning process cannot be separated. According to AECT (*Association of Education and Communication Technology*) cited by Firmadani (2020), media can be used in various forms to convey information. Meanwhile, Steffi & Muhammad Taufik (2015) revealed that learning media includes all aspects, both physical and technical, that help teachers when delivering learning materials to students and facilitate the achievement of learning objectives. Learning media also plays an important role in improving the quality of the

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Vol. 1, pg. 37 - 46
ISSN 3046-594X

teaching process, making learning more interesting and fun. One type of learning media that is currently developing is audio-visual media (Purwono et al, 2014).

In the interaction and teaching process, the media is used as a tool to transmit messages. learning activities involve five elements of communication, namely the teacher as a message sender, learning materials as message content, learning media as message delivery, students as message recipients, and learning objectives. Learning media includes everything that is used to convey learning material with the aim of attracting interest, arousing attention, inviting thinking, and stimulating students' emotions during the learning process which aims to achieve learning objectives. Therefore, learning mediais a very important component in the learning system that cannot be separated from the teaching and learning process. Without learning media, learning activities cannot run optimally because learning media contains information that includes knowledge and is also a means for students to participate in learning activities (Rachmadtullah, *et al,* 2021).

Based on several literature reviews above, it can be concluded that in the context of learning, media is used as a tool to transmit messages, involving five elements of communication: teachers as message senders, learning materials as message content, learning media as message delivery, students as message recipients, and learning objectives. Learning media aims to attract students' interest, arouse attention, invite thinking, and stimulate students' emotions in order to achieve learning objectives. Overall, learning media is a very important component in the learning system, inseparable from the teaching and learning process. Without learning media, learning activities cannot run optimally because learning media contains information that includes knowledge and is also a means for students to participate in learning activities.

The development of science is getting faster. In order to improve the quality of education in order to compete with developed countries, it is very necessary to have teachers who have high competence and professionalism. Qualified teachers are part of the requirements that must be met. Technology itself in the world of education is used as an intermediary in the creation of a learning goal. Students who can use the benefits of technology well can increase knowledge (Lestari, 2018). Technology can support education can be expected to help students and teachers in carrying out a process of teaching and learning activities carried out at school, so teachers can be helped in explaining material to students.

(Effendi & Wahidy, 2019) Technology has an important role in the field of education, namely: a) The emergence of mass media, especially electronic media, as a source of knowledge and the center of education. The impact of this is that educators are no longer the only source of knowledge for students; b) The emergence of new learning methods that can facilitate the learning process for students and teachers; c) The learning system is no longer limited to direct meetings between students and teachers. Technological advances allow the learning process to be carried out through the internet and various other media, so that students do not have to be in the same room with the teacher.

Technology is one of the supporting media in the implementation of the learning process, which has the aim of making it easier for students in learning activities and

improving the quality of learning activities (Sawitri, *et al,* 2019). Learning media is part of a supporting device that can be used in displaying facts, concepts, principles and special procedures to make them appear more concrete. Supporting devices are designed to provide a more real experience, motivate, improve students' ability to understand and remember learning material (Firmadani, 2020).

There are various types of learning media that allow teachers to use in the learning process such as: 1) human-based media, 2) print-based media, 3) visual-based media, 4) audio-visual-based media that support teaching and learning activities and of course have their own shortcomings and advantages (Asmarnis, et al: 2016). The media can be in the form of images, videos, presentations, or other learning media that use computers. In utilizing the media, a teacher must first prepare interactive multimedia so that the learning process can run in two directions that can provoke students to also ask, answer, or criticize the teaching material taught and delivered through the media.

Riswawati (2017) the use of learning media can improve the stages of learning and teaching activities by facilitating better understanding of concepts, in the results of this study found that the application of learning media has a significant impact on student motivation. This is because learning media presents material in an innovative and diverse way, so that it can be able to provoke student interest and attention. Pratomo Aji (2014) can be concluded that the use of learning media has benefits in increasing effectiveness in the learning process and teaching activities. Learning media itself can make it easier for students when they understand well the concepts taught, thus strengthening their overall understanding, and learning media can also support student learning outcomes.

Based on the above explanation of the relevance to current conditions, learning activities must be able to adapt to existing conditions, where technological sophistication must be utilized by academics, both educators and students to answer the challenges of the times that require humans to have and master the skills needed in their era, which is currently very important for humans to be able to have technological literacy and digital literacy. The application of digital or multimedia-based learning media is a solution for teachers in supporting a more meaningful learning process by following the challenges of the times. So it can be concluded, technology as a supporting media in the process of learning activities aims to facilitate students and improve the quality of learning activities. Learning media as a tool provides a more real experience, motivates, improves the ability of students to understand and improve learning outcomes and abilities of students.

Learning media is a set of tools or as a container in conveying messages or information that can be in the form of material in learning so that it can foster a person's interest in learning to achieve the goals of learning. Or learning media is a tool or a means of channeling and delivering material or content that can stimulate the minds of the audience so that the teaching and learning process can run effectively and the objectives of learning can be achieved perfectly (Zahwa & Syafai'I, 2022).

Media selection is an activity in sorting out which teaching materials are appropriate and not in accordance with the message or information to be conveyed. According to Kustandi & Sucipto (2016: 78) there are several factors in choosing the learning media to be used. Among these factors are as follows: a. Funds or materials, where some schools do not provide facilities to students. So that teachers at school do not

**International Conference on Teaching and Learning** Proceeding
Faculty of Education and Teacher Training – Universitas Terbuka
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use media to make it easier for students to learn material because the costs incurred are quite expensive. b. Learning material, not only paying attention to funds, a teacher must also pay attention to learning material, because in each material presented it is different so that the media to be used will also be different. c. Learners, the understanding possessed by each individual is very diverse. So that a teacher must also pay attention to the understanding of students. A teacher can also handle by making the media as interesting as possible so that all the attention of students who have different understandings can be directed to the media used to convey the material. d. Types of media, an educator must also pay attention to the media used to deliver the material. Types of media, an educator must also know the types of media first in order to determine which type of media is appropriate for the material being taught. It is intended that an educator can provide a stimulus response with students properly.

In the criteria for selecting learning media, there are several principles that exist, such as efficiency, relevance, and productivity. Every educator must prepare all the needs including learning media that will be used in the classroom, this preparation is done before carrying out learning activities. Because the components in learning play a major role in teaching and learning activities in order to achieve learning objectives. With the media in this learning, it is hoped that students will better understand learning material that is difficult to understand (Zahwa & Syafai'I, 2022).

A teacher must choose the right media in learning so that learning activities become more effective and efficient. If it is wrong to choose the right media in learning, it will be fatal for progress in understanding by students, because students will feel confused and not understand the material presented, the goals in learning will be very difficult to achieve. According to Setyosari (2009: 15) there are several criteria in choosing the right learning media in media selection, namely as follows: a. Suitability, namely as an educator must be able to adjust between the media and the material to be discussed. Like when educators give instructions to students to turn on the computer, then an educator must provide media and steps to turn on the computer. Educators must also understand whether the media used in this material can make students better understand what is being taught. b. The level of difficulty, which is intended is if the media provided by the school is only in the form of books and blackboards, while the book has a lot of pictures or writing that is not clear, or some words or sentences are missing or difficult to understand. Then the educator must be able to clarify the material with the media brought by himself. c. Cost, in choosing media must be smart to utilize the existing ones. It is not recommended to choose media at an expensive price, but it is difficult for students to understand. So it is better to choose media at an affordable price but every student is able to understand the material. d. Availability, if the school has less or inadequate facilities because the price of the media is very expensive, but a lesson must be delivered, then the educator must choose other media such as describing the steps or form of the media tool. Or it can be written on the board. e. Technical quality, media that have good technical quality will be very good and useful. For example, one media can be used in several materials, so it can be said that the media is good for understanding students in learning.

Along with technological advances, the development of learning media is so fast, where each existing media has its own characteristics and abilities. From this, then emerged efforts to organize it, namely grouping or classification according to the similarity of its characteristics or characteristics. The general characteristics of learning

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media according to (Oemar Hamalik, 1994), are: First, learning media is identical to the notion of demonstration which comes from the word "raga", meaning an object that can be touched, seen and heard and that can be observed through the five senses. Second, the main pressure lies on objects or things that can be seen and heard. Third, learning media is used in the framework of relationships (communication) in teaching between teachers and students. Fourth, learning media is a kind of teaching and learning aid, both inside and outside the classroom. Fifth, learning media is an "intermediary" (medium, media) and is used in the context of learning. Sixth, learning media contains aspects, as a tool and as a technique that is closely related to learning methods (Firmadani, 2020).

According to Hamdani (2011, 248) media can be grouped into three types, namely: 1. Visual Media Visual media is media that can only be seen using the sense of sight. This type of media is often used by teachers to help convey the content of the subject matter. Visual media consists of media that cannot be projected (non-projected visual) and media that can be projected (project visual). 2. Audio Media Audio media is media that contains messages in auditive form (can only be heard) that can stimulate students' thoughts, feelings, attention, and ability to learn teaching materials. Sound cassette programs and radio programs are forms of audio media. The use of audio media in learning is generally to convey subject matter about listening. 3. Audio-visual media As the name implies, this media is a combination of audio and visual or commonly called see-and-hear media. Audio visual will make the explanation of teaching materials to students more complete and optimal. In addition, this media within certain limits can also replace the role of the teacher. Because, the presentation of material can be replaced by the media, and the teacher can turn into a learning facilitator, which makes it easy for students to learn. Examples of audio-visual media include video or television programs, instructional video or television, and sound slide programs.

Furthermore, Sanjaya (2010, 172) suggests that learning media can be classified into several classifications, namely: 1. Judging from its nature, the media can be divided into: 1) Auditive media, which is media that can only be heard, or media that only has sound elements, such as radio and sound recordings. 2) Visual media, which is media that can only be seen only, does not contain sound elements. Included in this media are slide films, photographs, transparencies, paintings, drawings and various forms of printed materials such as graphic media, etc. 3) Audiovisual media, which is a type of media that in addition to containing sound elements also contains elements of images that can be seen, for example video recordings, various sizes of films, sound slides and so on. 2. Judging from the ability to reach, the media can be divided into: 1) Media that have wide and simultaneous coverage such as radio and television. 2) Media that have limited coverage by space and time, such as slide films, films, videos, and so on. 3. Judging from the technique or how to use it, the media can be divided into: 1) Media that is projected such as slide films, film strips, transparencies and so on. 2) Media that are not projected such as pictures, photos, paintings, radio, and so on. Based on the description above, it can be concluded that the types of media are very diverse, so a teacher must be skilled in choosing media. The selection of appropriate and correct media in the learning process will make students motivated to follow learning, but if the media used is not interesting then the material taught by the teacher will not be noticed by students.

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Technological advances that occur in the 21st century bring rapid and significant changes for teachers. This situation provides a challenge, especially for teachers, where teachers who are unable to adapt to these technological advances will automatically be left behind and even dubbed as teachers who are stuttering technology (gaptek) or in other words unable to master technology. Of course the problem is not appropriate when associated with the philosophy of Ki Hajar Dewantara which states that "Education must be in accordance with the nature of nature and the nature of the times". (Adianti, 2023). However, there are still many teachers in schools who use conventional learning models such as one of them using lectures to convey subject matter (Djonomiardjo, 2023). This means that this lecture model is not relevant if it is applied continuously in every learning process. So in this case, it is very important for teachers to pay attention to the situational conditions in the learning environment. This conventional model has shortcomings and causes boredom in students because learning activities are only focused on the teacher as the subject of learning. According to Wirabumi (2022), the conventional model through lectures will produce problems in learning such as teacher-centered learning activities, limited dialectical space for students, students' understanding of the material is easily forgotten, and difficulty in measuring the ability or competence of students. 21st century learning with easy access to technology is an opportunity that must be balanced with digital literacy skills. However, in this case, teachers show low understanding and skills in digital literacy that need to be improved by training in digital learning media development.

Behind the ease of using technology, it also raises a number of new problems, especially the readiness of human resource competencies, especially teachers in keeping pace with developments. Research institute Rissmeru (2019) reported that the results of the 2015 competency test nationally for teachers were still below the minimum score of 55 that year, and the minimum competency has been raised to 75 since 2018. The details of the test results in 2015 average scores include elementary school teachers 40.14; junior high school 44.16; high school 45.38. The data indicates that there are competency problems that must be resolved immediately, although it could be that in subsequent years or perhaps now there has been a significant increase in a positive direction. Many assume that an educator must be able to keep up with the development of science and technology, no one will argue with that, but if then the indicator of being able to keep up with developments only when able to operate electronic media and the internet cannot be absolutely justified. Whereas the variety of media that is informative and utilized according to learning needs should not be ignored, as Heinich's opinion, Wina Sanjaya (2014) He classifies non-electronic media or those that are not projected some of them: 1) Reality, real objects used for learning, 2) Models, objects that are representations of real objects, 3) Graphics, for example charts, posters, cartoons, graphs, 4) Disp lay, a medium that is installed in a certain place used to load information, such as planel boards and bulletin boards.

The use of learning media is based on the principle of learner needs, where the tendency or type of 21st century learners is interactive (Alya Rahma *et al*, 2023). However, generally the obstacle found when using digital-based learning media lies in its

procurement (Lailiyah & Mardliyah, 2021). The existence of technology is very influential in the learning implementation process. The existence of information and communication technology will assist teachers in disseminating or transferring information and maximizing the potential of students freely.

## CONCLUSION

Technology becomes an intermediary that helps explain learning materials and improve the quality of learning. Learning media is an important component during learning activities, which cannot be separated in learning activities. Learning media that uses technology becomes a supporting device that makes it easier to explain facts, concepts, principles, and knowledge in a more visual and interesting way. Thus, the use of technology and technology-based learning media can increase the effectiveness of learning and facilitate students and teachers to achieve learning objectives. However, the challenge that needs to be overcome is the lack of computer facilities and teacher competence in using technology in learning. In the face of growing technological advances, all parties in the world of education need to be able to keep up with these developments in order to optimize the use of technology as a medium in learning in elementary schools.

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