

## **INTEGRATING THE ROLE OF THE TEACHER IN TECHNOLOGICAL DEVELOPMENT: BUILDING A BRIDGE BETWEEN TRADITIONAL AND DIGITAL LEARNING**

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### **Abstract**

Technology in education is a system used to support learning to produce desired targets. Indonesian technology implementation states that technology can be used as a learning intermediary, management tool and learning resource. The development of science and technology has had a positive influence on increasing openness and the spread of knowledge across space and time on a global scale. The teacher is the only source of learning for students. In this educational interaction pattern, the class teacher dominates teaching and learning activities. This teaching pattern does not or does not provide opportunities for the use of technology in teaching. Books, blackboards, teaching media, libraries have not played a role in the teaching and learning process. Such teaching patterns do not provide space for the development of technology in teaching. In facing improvements in the quality of education in the digital era, the role of teachers is very much needed. However, in practice, teachers face several challenges in the world of education in the digital era, such as: developments in technology and

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information have an impact on the increasingly rapid development of science.

**Keywords:** The Role of Teachers, Technological Developments, Traditional and Digital Learning

## INTRODUCTION

Technological advances have changed many aspects of our lives, including the world of education (Sitopu et al., 2024; Afni et al., 2024; Antika et al., 2024; Guna et al., 2024). In this era, technology has played a significant role in improving the efficiency, accessibility and quality of education (Tubagus et al., 2023; Aslan & Shiong, 2023; Nurhayati et al., 2023; Muharrom et al., 2023). New technological facilities and tools have made learning experiences more interactive, personalized and affordable for students around the world.

Along with global technological advances, it has been affected in all aspects of life in the fields of economics, politics, culture, arts and even in the world of education (Nurdiana et al., 2023; Erwan et al., 2023; Sarmila et al., 2023; Sulastri et al., 2023). Technological progress is something that we cannot avoid in this life, because technological progress will run in line with scientific progress (Haddar et al., 2023; Aslan & Pong, 2023). Every innovation is created to provide positive benefits for human life (Tuhuteru et al., 2023; Astuti et al., 2023). Providing many conveniences, as well as a new way of carrying out human activities, especially in the field of information technology, we have enjoyed many benefits brought by the innovations that have been produced in the last decade. However, although it was originally created to produce positive benefits, on the other hand it is also possible to use it for negative things (Buermans, H. P. J., & Den Dunnen, J. T, 2014).

Technology development itself must be based on ethics and humanity so that everyone can master science and technology equally (Eigaard, O. R., et al, 2014). In Indonesia, National Technology Awakening Day is celebrated on the 10th of every year in August. This concerns the launch and first flight of an aircraft operating throughout Indonesia which was the work of the nation's children, namely the N-250 called Gatotkaca, on 10 August 1995. Proud of this achievement, the government approved the Presidential Decree of the Republic of Indonesia No. 71 of 1995, August 10, like National Technology Awakening Day, the use of technology has made possible many benefits and conveniences that bring new innovations to society which were created from the start to create positive benefits, on the other hand, it can also be used for negative things. . Technology itself is actively used to support learning which is

increasingly popular in today's education system, due to the frequent use of the internet and smartphone applications by students (Hakansson, H., & Waluszewski, A, 2003). Mobile devices and related applications can be used in education to obtain educational content, additional data sources, find specific information, and encourage interaction and communication between groups at the same level.

Technological developments change the way we obtain and convey information. Teachers must adapt to more interactive teaching methods and utilize digital tools such as slide presentations, videos and other multimedia. They also need to recognize students' needs in accessing information online.

In the digital era, teachers can easily get caught up in using technology and spending too much time in front of screens. They need to learn to manage their time wisely, including preparing teaching materials that are in accordance with the curriculum and providing feedback to students. Not all students have the same access to technology, and this can create gaps in learning. Teachers need to find ways to provide equal access to technology to all students, so that they have equal opportunities to access information and learning resources (Lee, C., & Lim, C, 2021).

When using technology, teachers must also consider student security and privacy. They must ensure that student data is protected and that they use safe and trusted applications or platforms. In the digital era, some students may be more skilled at using technology than teachers. Therefore, the teacher's role is evolving to become more of a facilitator of learning, supporting students in navigating technology and building their digital skills.

In the digital era, many distractions are available to students, such as social media, online games, or instant messaging. Teachers need to find ways to retain students' attention and make learning interesting and relevant to them. They must use technology wisely as a tool to increase student engagement in learning. Not all teachers have adequate digital skills. Some of them may feel uncomfortable or unskilled in using technological tools (Ivanova, A. S., 2019). Therefore, they need to receive adequate training and support to improve their digital skills, so that they can integrate technology effectively in learning. Adopting technology in learning also requires investment in adequate hardware and infrastructure. The challenge for teachers is to ensure that the devices and networks they use function properly, are kept up to date, and provide reliable service to students.

In teaching in the digital era, teachers need to evaluate the assessments used to measure student understanding. They must find ways to

integrate assessments that reflect students' use of technology and digital skills. Teachers must also educate students about digital ethics and online safety. They need to teach students about the importance of protecting their privacy, identifying and avoiding cyberbullying, and using technology responsibly (Fang, Z, 2002).

Through education and training, teachers can overcome these challenges and become better prepared to teach in the digital era (Bliznets, I. A. Y, et al, 2018). It is important for them to remain open to change, learn continuously, and be willing to collaborate with students, peers, and parents to create an effective and relevant learning environment in the digital era. To overcome these challenges, teachers can stay abreast of developments in technology and digital education, develop their skills in the use of digital tools, and collaborate with colleagues to share experiences and best practices.

## **RESEARCH METHOD**

The study in this research is qualitative with literature. The literature study research method is a research approach that involves the analysis and synthesis of information from various literature sources that are relevant to a particular research topic. Documents taken from literature research are journals, books and references related to the discussion you want to research (Earley, M.A. 2014; Caruth, G.D. 2013).

## **RESULT AND DISCUSSION**

### **A. The Role of Teachers in Traditional Education**

In this traditional teaching pattern, the teacher (or teacher) plays the main role in determining the content and teaching methods, including assessing student learning progress. The teacher is the only source of learning for students. In this educational interaction pattern, the class teacher dominates teaching and learning activities. This teaching pattern does not or does not provide opportunities for the use of technology in teaching. Books, blackboards, teaching media, libraries have not played a role in the teaching and learning process. Such teaching patterns do not provide space for the development of technology in teaching. Traditional teaching patterns in foreign language teaching will rely more on writing skills. Listening and speaking skills only occasionally (Luan, W. S., & Bakar, K. A, 2008).

According to Thomas E. Curtis and Wilma W. Bidwell, the role of the teacher in the learning process in school (classroom) is more specific in a

narrow sense, namely in relation to the teaching and learning process. The teacher's role is as an organizer of the learning environment and also as a learning facilitator. The first role includes more specific roles, namely: (Oemar Hamalik, 2008)

1. Teacher as a model
2. Teachers as planners
3. Teacher as fortune teller
4. Teachers as leaders
5. Teachers as guides or guides to learning centers.

In relation to their role as planners, teachers are obliged to develop educational goals into operational plans. General objectives need to be translated into specific and operational objectives. Students need to be involved in the planning so as to ensure its relevance to their development, needs and level of experience. This role requires that planning always be relevant to community conditions, student learning habits, student experience and knowledge, harmonious learning methods and subject matter that suits their interests.

In developing teaching preparation, you must first know the meaning and purpose, as well as master the theoretical and practical elements contained in teaching preparation. The ability to make teaching preparations is the first step that teachers must have, and is the source of all theoretical knowledge, basic skills and in-depth understanding of learning objects and learning situations (Hamid Darmadi, 2009).

In teaching preparation, it must be clear what basic competencies students will have, what must be done, what must be learned, how to learn it, and how the teacher will know that students have mastered certain competencies. These aspects are the main elements that must be present at a minimum in every teaching preparation as a teacher's guide in carrying out learning and forming student competencies (Spahiu, I., & Spahiu, E, 2013).

Furthermore, science and technology continue to experience development and refinement. Islamic education also has an important role in improving human resources, in accordance with its characteristics as religious education, ideally Islamic education functions in preparing high quality human resources, both in mastery of science and technology (IPTEK) and in terms of character, moral attitudes and faith. and Taqwa (IMTAQ), as well as appreciation and practice of religious teachings. Ideally, according to the author, education functions to develop and prepare

students who are knowledgeable, technological, highly skilled and at the same time have faith and do good deeds.

## **B. Development of Educational Technology and the Role of Teachers**

Technology in Education is a systematic method for planning, using, and evaluating teaching and learning activities by considering technical and human resources and their interactions, to achieve an effective form of education (McCombs, B. L, 2000).

Meanwhile, according to Yusuf (2012) Technology for Education is a systemic process that helps learning problems that arise. This is in accordance with Muffoletto's (2011) statement that educational technology is not just about computers or other devices but about processes and systems that lead to the desired results. From several points stated above, it can be concluded that educational technology is a tool used to advance education.

The increasingly rapid development of technology increases the demands of a teacher. Teachers in today's digital era are required to master and utilize technology in designing innovative and creative learning. According to Fitriah D & Miranda (2019), the students faced by teachers today are a generation that grew up amidst technological developments, where they are already familiar with digital technology. This shows that teachers, as one of the main elements in the world of education, are obliged to always upgrade their competency skills so that they are ready to face developments in educational technology.

Apart from that, in the current digital era, the teacher's job is not only as a presenter of information, but the teacher must be able to become a facilitator and motivator who must give time to students to explore their learning abilities in finding and processing learning information on their own (Tondeur, J., et al, 2016). Therefore, teachers must be able to take advantage of the availability of technological information to increase insight and skills in designing and providing creative and varied methods, so that students' interest in learning can increase.

In facing improvements in the quality of education in the current digital era, teachers often experience obstacles and challenges in their teaching process. The following are the challenges that teachers must face in the world of education in the digital era: first, the development of technology and information has an impact on the increasingly rapid development of science. Second, behavior, morals and manners are

increasingly declining. Third, the rise in crime rates, violence, as well as increasing unemployment and poverty. A situation like this, of course, requires competent teachers in order to equip their students with the skills so that their students are able to face and resist the currents that are happening and continuing to change in this digital era (Akbar A & Noviani N, 2019).

Thus, teachers in the current digital era are required to be able to improve their scientific qualifications in changing classical patterns that still exist in the learning process, as well as improving and maintaining attitudes and behavior in front of students. Apart from that, teachers must be aware of the increasingly rapid technological developments. Where in this case teachers must implement positive impacts and anticipate negative impacts from the development of educational technology in the digital era on the learning process.

### **C. Challenges in Integrating Technology in Traditional Learning**

The following are several significant challenges faced by teachers and students in applying technology in learning:

1. Regarding the various devices used in applying technology in learning. It turns out that the learning technology currently being developed has its own problems which are still a source of debate. This debate moves from a small perspective to a very broad one because it contains three things that educators must pay attention to when utilizing educational technology (Prawradilaga, 2012). The first is a hardware problem. When talking about educational technology, the use of modern hardware such as laptops, computers, LCDs, projectors, gadgets and other items that are always used in the learning process is always significant. Because not everyone can have these commodities, gadgets are said to be a challenge. This is also due to the high prices of these goods, which creates an impression of disparity and gives rise to the perception that education is expensive. Second, this concerns substance or software. This is of course an obstacle for educational technology because this software is used to help implement education through this software system or application (Muliana, 2018). If this continues, educational technology as a method or process for responding to educational challenges will not be realized. As a result, instruction will take place

throughout the important stages, without major implications for educational development. This problem is quite clear, especially for educators who are still struggling with conventional and manual things, so learning new things in the program is very difficult and even takes a long time to understand the features in the software. This is also an obstacle to the progress of learning technology, namely software. The final consideration is brainware.

The presence of brainware in educational technology then refers to the basic concept that educational technology does not always revolve around laptops or computers and applications that facilitate the learning process, but how the presence of brainware contributes to solving problems that can be studied scientifically through the development of knowledge that can be implemented in a practical setting. (Danim, 2008). This is important to understand because according to Dantes, education that can overcome future difficulties is education that can develop students with the knowledge, abilities and attitudes to adapt to the era of globalization (Dantes, 2014). Apart from hardware and software, educational technology has another component that must be understood, namely brainware or users. These users are very important for the advancement of educational technology. This shows that humans as users are expected to use technology which is the result of human thought but cannot always be used by other humans, this shows an imbalance between expectations and reality. As a result, advances in educational technology have become a source of hope as well as a source of difficulty for all components of education, not only within the classroom or school, but also at the general public level in global society.

2. Regarding teachers' abilities in using technology in the current era. It should be noted that there is indeed training provided for teachers, but the facilitators do not have good qualifications in teaching and learning to integrate technology in the learning process (Buchner & Hay, 1999). They also rarely have the appropriate technology topic knowledge and skills to deliver these workshops, implying that teachers actually receive inadequate and low-quality technology training. This, in turn, hinders their capacity to teach or use technology when needed. Furthermore, Khumalo (2004) defines preparation for teaching technology as more than just an advocacy and communication campaign in this globalized world. Because paradigm changes are basically the goal of deploying technology, mental and professional preparedness and preparedness

are required. Most teachers are not ready to incorporate technology into the teaching and learning process. Furthermore, Gumbo and Makgato (2008) stated that teachers have shortcomings in guiding students to use technological information like this which is needed to keep up with changes in the technological environment. Teachers are the key to good education, or vice versa. According to Gumbo and Makgato (2008), technology can be taught and learned better if teachers understand what to teach and learn. Teachers must also have a deep awareness of how technology is used for teaching and learning.

#### **D. Effective Technology Integration Models**

It is sometimes difficult to describe how technology can impact learning because the term “technology integration” is a broad term that encompasses so many varied tools and practices (Yurtseven Avci, Z, et al, 2020). There are many ways technology can become an integral part of the learning process. Only a few of these ways are listed below, but new technology tools and ideas emerge every day to improve things.

1. Online Learning and Blended Learning

While K-12 online learning is gaining traction around the world, many teachers are also exploring blended learning or a combination of online and face-to-face education. With this method, learning can be maximized by distributing material differently between technical and non-technical material.

2. Project Based Activities That Incorporate Technology

Many of the most rigorous projects are infused with technology from start to finish. This means that students can apply the material they get by combining it through technology to get maximum results.

3. Game-Based Learning and Assessment

There are many benefits to be gained by incorporating simulations and game-based learning activities into classroom learning. Integration of technology in the form of video and text to educate students by providing information in the form of games. This method tends to be easier for students to accept compared to traditional learning methods.

4. Learn with Mobile Devices

For some Indonesians, learning using smartphones is a distraction. However, in supporting effective learning, devices such as mobile phones, mp3 players and tablet computers are now being used as learning tools in forward-thinking schools. Because by integrating

material, education and students' preferences with this mobile device, it makes them more comfortable learning. However, family control sometimes makes this learning less effective. Therefore, the use of an LMS-based system is an important medium for carrying out mobile-based education and makes students more focused on getting material from teachers (Kimmons, R., et al, 2020).

## **CONCLUSION**

Science and technology continue to develop, even now increasing rapidly. Technology in education is a system used to support learning to produce desired targets. Indonesian technology implementation states that technology can be used as a learning intermediary, management tool and learning resource. The development of science and technology has had a positive influence on increasing openness and the spread of knowledge across space and time on a global scale. There are also negative influences, namely changes that occur in people's lives. In this situation, the role of education is very important to increase positive influences and correct negative influences. Technology is one of the most effective media in learning activities. However, its use must be consistent with learning objectives, because misuse often occurs in the use of this technology.

Technological advances that have an impact on aspects of education cannot be separated from the role of a teacher. In the current digital era, teachers are required to have the ability and skills to design and prepare high-quality learning methods based on educational technology which are realized in a teaching process that is able to improve the quality of students. Apart from that, the task of a professional teacher is not only as a presenter of information, but the teacher must also be able to act as a facilitator, motivator and guide who provides direction and opportunities for students to explore their learning abilities in finding and processing learning information on their own. Therefore, teachers must be able to utilize the availability of technological information to increase insight and skills in designing and providing creative and varied methods, in order to encourage students to be more active and able to think critically in solving learning problems.

In facing improvements in the quality of education in the digital era, the role of teachers is very much needed. However, in practice, teachers face several challenges in the world of education in the digital era, such as: developments in technology and information have an impact on the increasingly rapid development of science. Then, technological developments

also have an impact on behavior, morals and manners which are increasingly decreasing. Furthermore, in the current digital era, crime rates, violence, as well as unemployment and poverty are increasing. A situation like this, of course, requires the role of a competent teacher in order to equip students with the skills so that students are able to face and resist the currents that are occurring and continuing to change in this digital era.

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