



**THE INFLUENCE OF TECHNOLOGICAL SOPHISTICATION
IN EDUCATIONAL TRANSFORMATION: PERSPECTIVE
FROM LITERATURE STUDIES**

THESIS

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ABSTRACT

Sahriyah, Suci. 2025. *The Influence of Technological Sophistication in Educational Transformation: Perspective from Literature Studies*. Thesis, Magister in English Language Education Universitas Islam Malang. Advisor I: Dr. Dra. Mutmainnah Mustofa, M.Pd; Advisor II: Dr. Dzul Fikri, S.S., M.Pd.

Keywords: Technology, influence, learning.

Technology has become an inseparable part of human life. Along with the rapid development of technology that is able to reach all lines of life, education has become one of the main things that is also affected by the development of digital progress.

In this study, researcher used Systematic Review (SR) or generally called Systematic Literature Review (SLR). Researcher have identified books, journals, and articles, which published from 2006 – 2023, that are relevant to finding out the extent to which technology applied in education has an influence on education in the modern era, like today. The results of the researcher's analysis show that technology brings many changes and impacts on education, both positive and negative.

The findings of this study provide insight for policy-makers and education practitioners, especially in Indonesia, to review and formulate effective strategies in the use of technology to improve quality of education. Also, for parents and students to be able to utilize technological advances properly and wisely. Therefore, for further research, it is hoped that studies can be conducted more specific about the application one of technologies that can be utilized in educational transformation, for example about AI.

ABSTRACT

Sahriyah, Suci. 2025. *The Influence of Technological Sophistication in Educational Transformation: Perspective from Literature Studies*. Thesis, Magister in English Language Education Universitas Islam Malang. Advisor I: Dr. Dra. Mutmainnah Mustofa, M.Pd; Advisor II: Dr. Dzul Fikri, S.S., M.Pd.

Keywords: Teknologi, Pengaruh, Pembelajaran.

Teknologi telah menjadi bagian yang tidak terpisahkan dari kehidupan manusia. Seiring dengan perkembangan teknologi yang pesat yang mampu menjangkau semua lini kehidupan, pendidikan telah menjadi salah satu hal utama yang juga terpengaruh oleh perkembangan kemajuan digital.

Dalam penelitian ini, peneliti menggunakan Tinjauan Sistematis (SR) atau yang umumnya disebut Tinjauan Literatur Sistematis (SLR). Peneliti telah mengidentifikasi buku, jurnal, dan artikel, yang diterbitkan dari 2006 – 2023, yang relevan untuk mengetahui sejauh mana teknologi yang diterapkan dalam pendidikan memiliki pengaruh terhadap pendidikan di era modern, seperti saat ini.

Hasil analisis peneliti menunjukkan bahwa teknologi membawa banyak perubahan dan dampak pada pendidikan, baik positif maupun negatif. Temuan studi ini memberikan wawasan bagi pembuat kebijakan dan praktisi pendidikan, terutama di Indonesia, untuk meninjau dan merumuskan strategi yang efektif dalam penggunaan teknologi untuk meningkatkan kualitas pendidikan. Juga, bagi orang tua dan siswa untuk dapat memanfaatkan kemajuan teknologi dengan baik dan bijaksana. Oleh karena itu, untuk penelitian selanjutnya, diharapkan studi dapat dilakukan lebih spesifik tentang penerapan salah satu teknologi yang dapat dimanfaatkan dalam transformasi pendidikan, misalnya tentang AI.

CHAPTER I

INTRODUCTION

In this chapter the researcher presents some points related to this study. These include background of the study, formulation of the research problem, objective of the study, delimitation of the study, significance of the study, and definition of the key terms.

1.1 Background of the Study

In today's era, communication technology has experienced very rapid development. The internet is one of the technologies that is currently developing very rapidly (Ningsih, 2024). The internet has become a basic human need from the upper to the lower classes, from the elderly to children. Even the internet has gone global, so that this world feels limitless. Information and communication can be obtained in such as an instant, even from parts of the world that are very far from where we are.

Nowadays, humans are very dependent on technology (Wolff, 2021). This makes technology a basic need for everyone. From children to adults, experts and lay people use technology in various aspects of their lives. Technology today has developed very rapidly.

With the development of the times, science and technology have also developed; technological advances are part of modern life. In the world of education, technology greatly influences science (Wolff, 2021). With technology,

a person can be helped in carrying out their daily tasks both in the world of work and education. In addition, technology is also knowledge whose understanding includes the systems found on computers and laptops. Technology also influences other developments, especially in education. Currently, we can feel together the impact of technology in our daily lives. Technology is used in the field of education as a supporting tool in terms of learning (Rasyid et al., 2022).

The development of information and communication technology has had a significant impact on various aspects of life, especially education (Mustofa et al., 2020). In Indonesia, the use of technology in education has begun to grow rapidly (Rabani et al., 2023). This began since the Covid-19 pandemic forced a shift from face-to-face learning to online learning (Ismiatun & Suhartoyo, 2022).

The development of technology in education in Indonesia can be seen from the increasing use of digital devices and e-learning platforms. Magdalena et al. (2020) stated that with the emergence of e-learning as a form of innovation in learning, students are not only able to obtain material descriptions but also various student potentials also experience changes. With e-learning, students will also be active in observing, demonstrating, doing, and so on. In addition, teaching materials can also be virtualized as attractively as possible in various forms according to what we want, so that students are more comfortable and at home or not easily bored in the learning process. In addition, e-learning is also very suitable for applying to online learning without having to have face-to-face meetings between educators and students (Kurniasih et al., 2022).

With the increasing creation of technology at this time, all parties in the world of education must be able to keep up and follow the progress of existing technology. We can see that in the influence of our environment, technology is very much supported by the availability of internet networks, which can affect other developments, especially in the scope of the world of education. In education, the internet is utilized as a supporter of learning media (Nurfadhillah et al., 2021).

In this era of globalization, technology increasingly influences the world of education, so the world of education should continue to adapt to technological advances in order to improve the quality of education (Agustian & Salsabila, 2021). Currently, educational institutions utilize technology to help students learn. Technology is used as information where students can access information as a source of learning to make it easier to do assignments and learning (Nurillahwaty, 2021). On the other hand, the advancement of this technology has resulted in many people who cannot control the use of this technology.

Technology is very important in the field of education because technology can facilitate and support the learning process. For example, the facilities provided by schools in urban areas are different from schools in rural areas. Starting from the learning process, teachers and students will be influenced by educational technology. Through technology, the learning process feels easier. However, technology will also have a negative impact. Therefore, it is highly recommended to understand how technology can affect learning conditions (Andika, 2022).

The existence of technology today is considered very important in human life as a support in carrying out various activities both in doing work and in education. Educators can utilize technology as a learning medium or mediator in conveying knowledge to students through several applications, such as Zoom, Google Classroom, Google Meeting or via WhatsApp group (Mahendra, 2021). By using the learning media above, educators can make interesting and non-monotonous material explanations so that students are interested and remain enthusiastic in participating in the teaching and learning activities.

However, Nainggolan et al. (2024) stated that many students complain that online learning is considered less effective because students are required to learn autodidactically (by themselves). Basically, not all elements have good basic technological capabilities. In this case, it can be implied that the ability to use technology is not universal (Karimullah et al., 2025). It still does not deny that technology is not something that is difficult to learn. Many parents are unable to teach the material in the book, and are only able to guide, constrained by the network, inadequate technology, to unstable signals.

Along with the development of the era, learning technology has also developed. Technological developments are often utilized in the world of education in the daily learning process. For example, by using various electronic media such as the internet, interactive TV, CDs, and audio or video as a means of communication interaction between two or more people (Mahliza et al., 2023). Distance learning or e-learning can be accessed through the help of features on the

internet. Besides that, we must also remember that technology has positive and negative impacts (Ramadhan et al., 2021).

With the development of new technologies, such as digital technology, new opportunities and new challenges have also emerged for the world of education (Rahman, 2016). In previous research, as conveyed by Rahman (2016), technology has several negative effects that can disrupt daily life. Therefore, we must be able to overcome these, such as limiting the use of gadgets, dealing with children when using gadgets or the internet, understanding how to use the internet properly because some of the things are caused by the misuse of information and communication technology and lack of understanding of the rules and how to use information technology properly and correctly (Rahman, 2016).

Martina et al. (2020) stated that technology is also a very effective medium for teaching. However, its use must be in accordance with educational goals. Technology has developed very rapidly throughout the world, especially in Indonesia. Imawan et al. (2023) argues that with the advancement of this technology, many people are unable to use technology regularly. For example, using gadgets or cellphones can affect a person's behavior and character, such as changing a person's behavior that tends to be apathetic. Especially in elementary school, children there must be guidance when using it.

The use of technology in education in Indonesia still faces various challenges. One of the main challenges in the digital divide between urban and rural areas. This causes a gap in access to education between students in urban and rural

areas. In addition, the lack of skills and knowledge of teachers about utilizing technology is also an obstacle to the implementation of technology in education. In delivering material appropriately, the availability of competent teachers is an absolute necessity (Suhartoyo & Widowati, 2018).

In addition to the digital divide, teacher training is also an important factor in the use of technology in education. Mulyadi (2017) stated that the lack of training and professional development for teachers in the use of technology is one of the main challenges in the integration of technology in education. Teachers need to be equipped with adequate skills and knowledge to use technology effectively in the learning process. Without adequate training, the use of technology in education will not provide optimal results.

Technology also plays an important role in expanding access to education, especially in remote areas. Widodo (2019) stated that technology can help overcome the limitations of access to education in remote areas through the use of e-learning platforms and distance learning. With technology, students in remote areas can access the same learning materials as students in urban areas, so that the gap in access to education can be reduced. However, the success of technology in expanding access to education also depends on the availability of adequate technological infrastructure and internet access.

On the other hand, technology also brings new challenges to education, such as data security and privacy issues. Sari (2020) stated that with the increasing use of technology in education, data security and privacy issues have become major

concerns. The use of e-learning platforms and digital devices requires the storage and management of student data, which is vulnerable to security risks. Therefore, it is important to ensure that the technology used in education has an adequate security system to protect student data and privacy.

Thus, the integration of technology into education in Indonesia has a significant positive impact on the quality of learning and access to education. However, challenges such as the digital divide, lack of teacher training and data security issues need to be addressed through appropriate policies and investment in technology infrastructure and teacher training. It is important for policymakers and education practitioners to work together to formulate strategies that can maximize the benefits of technology in education to improve the quality of education in Indonesia.

The use of technology in education also requires changes in the approach to learning and curriculum (Widowati & Suhartoyo, 2018). Technology opens up opportunities for the development of a more flexible and adaptive curriculum, which can be tailored to the needs and interests of students. In addition, technology also allows integration between formal and informal learning, where students can learn not only in the classroom, but also through various online learning resources. Therefore, it is important to develop a curriculum that can optimally utilize technology to support more effective and efficient learning (Agustina & Suprianto, 2018).

The development of technology in education in Indonesia also affects the role of teachers. Teachers no longer only act as material deliveries, but also as facilitators and guides in the learning process. Mulyadi (2017) stated that technology allows for more independent learning and students can learn according to their own pace and learning style. Therefore, teachers need to have adequate skills and knowledge of utilizing technology to support more effective and efficient learning. In addition, it is important for teachers to continue to develop their skills through ongoing training and professional development.

In addition, it is important to involve all stakeholders in the development and implementation of technology in education. Collaboration between the government, schools, teachers, parents, and students is essential to ensure the success of technology integration in education. The government needs to provide adequate policy support and investment in technology infrastructure and teacher training. Schools and teachers need to develop learning approaches that can make optimal use of technology. Parents and students need to be encouraged to use technology wisely and responsibly in supporting the learning process (Afianti, 2024).

Overall, the integration of technology into education in Indonesia offers great opportunities to improve the quality of learning and access to education (Suhartoyo, 2017). However, the success of technology integration in education depends not only on the availability of technology, but also on the ability of teachers and students to utilize technology effectively. Therefore, it is important to address existing challenges and develop strategies that can maximize the benefits of

technology in education to improve the quality of education in Indonesia. With the cooperation of all stakeholders, technology can be an effective tool to support better and more equitable learning for all students in Indonesia (Sari, 2020).

Thus, this study provides important insight into the impact of technology on education in Indonesia and the challenges faced by integrating technology into education. These findings can be used as a basis for formulating effective policies and strategies in utilizing technology to improve the quality of education in Indonesia. This study also emphasizes the importance of teacher training and investment in technology infrastructure to ensure the success of technology integration in education. With the right approach, technology can be a powerful tool to support more effective and efficient learning as well as expand access to education for all students in Indonesia (Widodo, 2019). This makes researcher want to examine how far technology influences education, especially in Indonesia.

1.2 Research Problem

Based on the background of the study explained above, the researcher formulates the statement of the problem, as follows:

1. To what extent does digital technology influence education in this modern era?

1.3 Objective of the Study

The researcher's aim in conducting this research is to find out to what extent the technology applied in education has an impact on education itself.

1.4 Significance of the Study

The significance of this research is expected to be an inspiration for educators at all levels of educational institutions, from elementary education to higher education level, in implementing the use of technology in education.

1.5 Delimitation of the Study

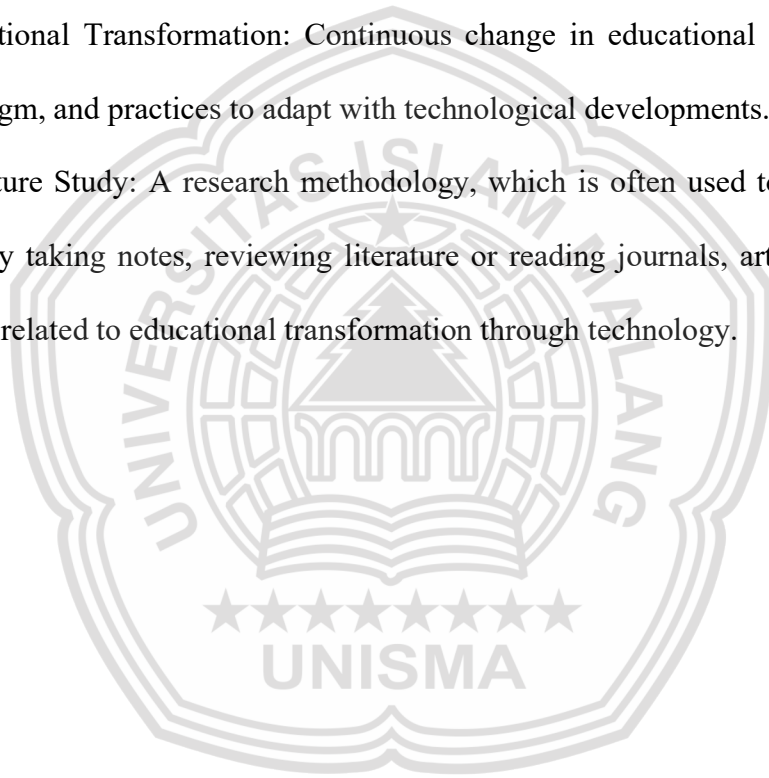
Based on the identification of the problems above, the accuracy or delimitation of the problem in this case is that the researcher did not conduct field research and utilized technological developments by accessing journals, articles, books, and other scientific works to gain insight into how far the increasingly brilliant technological advances have an impact on education.

1.6 Definition of Key Term

Definitions of key terms are provided by the researcher to avoid misunderstanding and ambiguity in understanding the words used by the researcher. This needs to be considered because there are terms that need to be defined in this study.

1. Technology: Application of scientific knowledge in learning so that learning objectives can be achieved effectively and efficiently, which is not only limited to goods or hardware but also software and brain ware.
2. Online learning: A learning system that is carried out without direct face-to-face contact, but uses a platform that can help the teaching and learning process that is carried out even though it is a long distance.

3. Influence: The ability to influence the thought, feelings, and actions, to others, especially in the teaching and learning process for the development of the students through technology.
4. Perspective: The framework of thinking used in understanding and carrying out the educational process which includes various points of view about technology.
5. Educational Transformation: Continuous change in educational systems, paradigm, and practices to adapt with technological developments.
6. Literature Study: A research methodology, which is often used to collect data by taking notes, reviewing literature or reading journals, articles, or books related to educational transformation through technology.



CHAPTER V

CONCLUSION AND SUGGESTION

This chapter will show the brief conclusion and suggestions for completing data research based on the results of the study.

5.1 Conclusion

Based on research conducted by researcher, it can be concluded that technology has a very strong influence in the field of education. It allows easy and fast access to various types of information from around the world, facilitates communication between individuals, encourages innovation and research ideas, and changes the way we interact with others around the world.

The use of technology, information and communication can provide solutions to the learning process which is always constrained by time and place, and it can improve the quality of education. The positive impact of Information and Communication Technology (ICT) in the field of education is the innovation in learning, IT-based learning methods and models, administrative systems in educational institutions, and educational research that utilizes IT.

However, the use of ICT also has negative impacts, such as internet abuse and gadget addiction. Therefore, to maximize the use of ICT in education, cooperation is needed between the government, schools, and the community. Fast and affordable internet access must be guaranteed, and an optimal curriculum that includes the use of ICT needs to be developed. Training on the use of ICT in

learning also needs to be provided for teachers and lecturers, while supervision of the use of ICT in the school or campus environment needs to be improved. There are many benefits that can be taken to help educators in implementing the process of teaching and learning activities and communication as student control at home and parental control at school.

Nevertheless, the negative impacts of technology are no less, only educators and parents can control and supervise students so that they do not fall into the negative impacts of technological developments.

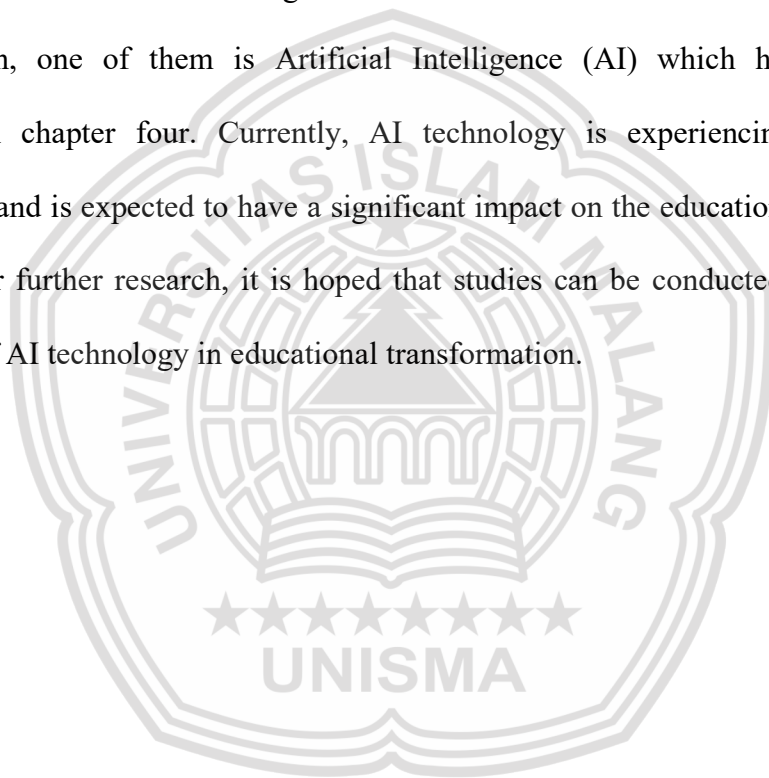
5.2 Suggestions

The rapid development of information technology has an impact on the world of education, so that teachers and students are required to have knowledge of utilizing information technology as a sign of the advancement of science and technology. Therefore, the results of this study have several suggestions as a consideration in utilizing information technology in learning, as follows:

1. Facilitators should be observing and pay more attention to how information technology is utilized in learning.
2. Educators should have skills at utilizing information technology in learning.
3. Educators should know the stages when utilizing information technology during learning.
4. Educators should maximize training on the utilization of information technology so that there are no obstacles during learning in the classroom.

5. Obstacles that arise when utilizing information technology should be immediately resolved as a whole.
6. Educators should be able to provide solutions to obstacles in the utilization of information technology and motivate students to utilize information technology.

There are some technologies that can be utilized in educational transformation, one of them is Artificial Intelligence (AI) which has been mentioned in chapter four. Currently, AI technology is experiencing rapid development and is expected to have a significant impact on the education sector. Therefore, for further research, it is hoped that studies can be conducted on the application of AI technology in educational transformation.





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