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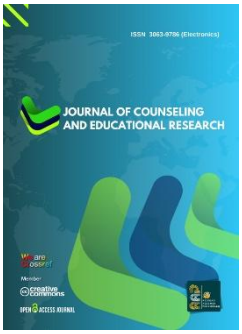

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Nimas Dahlia Putri, Selly Moza Abtasari, Fathan Cahyan Izazi, Nurhidayah Nurhidayah, Romi Fajar Tanjung, Silvia AR
Universitas Sriwijaya

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Correspondence regarding this article should be addressed to:
Nimas Dahlia Putri, dp235448@gmail.com, Palembang, Indonesia

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Original Article

The relationship between the use of technology in learning and student self-efficacy

Nimas Dahlia Putri[1], Selly Moza Abtasari[2], Fathan Cahyan Izazi[3], Nurhidayah Nurhidayah[4], Romi Fajar Tanjung[5], Silvia AR[6]
Universitas Sriwijaya[123456]

Abstract. Information technology and self-efficacy in learning activities are very important, because information technology is a process that can help to make it easier to access and obtain the desired scientific information. The aim of the research is to determine the level of technology use in learning and the level of student self-efficacy and to examine the relationship between the use of technology in learning and student self-efficacy. The method applied in this research adopts a quantitative approach with a correlational type. This study had 34 samples determined using random sampling techniques. The research results show that the level of skills in using technology in learning and students' self-efficacy are generally in the medium category. Then it can be seen that the correlation between variables does not show a significant correlation.

Keywords: Use of technology, learning, self-efficacy, student

Corresponding author: Nimas Dahlia Putri, dp235448@gmail.com, Palembang, Indonesia

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Introduction

Technological advances and the rapid flow of information via the internet have had a significant impact on the lives of today's young generation. They are used to communicating, accessing information, playing games, and even shopping using the handheld devices they own, namely smartphones. Almost the entire younger generation, both those from well-off and less well-off families, as well as those living in urban and rural areas, already have smartphones. It can be said that smartphone use has become an inseparable part of the younger generation's daily life.

The level of dependence of the younger generation on smartphones tends to be even higher than on television. Sometimes, they will feel more upset if they cannot access the internet than losing their pocket money. This shows how big the influence of technology, especially smartphones, is in the lives of today's young generation (Turner, 2015). In using technology, especially smartphones, some of the younger generation use it for self-empowerment, as well as for entertainment. However, this condition is inversely proportional to the majority of other young people who apparently still have low digital literacy awareness. As a result, they tend to use smartphones only for consumer purposes, without utilizing them optimally (Kennedy & Fox, 2013).

However, as time goes by in developing effective learning models, technological accessibility has become an important factor in the effectiveness of the use of technology in education to improve student academic achievement. Students who do not have adequate technological accessibility will have difficulty accessing online learning materials, which can

affect their learning outcomes (Dhianti, 2021). The use of technology in an educational context must be accompanied by appropriate learning strategies. Appropriate learning strategies can help increase the effectiveness of using technology in the teaching and learning process. One strategy that can be implemented is Project-Based Learning (PBL). Project-based learning can help students learn actively and be directly involved in the learning process. Through this approach, students not only learn the material passively, but can also apply their knowledge to concrete tasks. Thus, the effectiveness of the use of technology in education can be strengthened.

However, the effectiveness of using technology in education is also influenced by the digital divide. Students who come from underprivileged families and who live in remote areas may not have adequate access to technology, so they experience difficulties in accessing online learning materials. Limited access to technology can impact student academic outcomes. Students who cannot utilize technology optimally will be left behind in the learning process compared to students who have much better internet access. This can ultimately reinforce inequalities in education.

Therefore, efforts to increase the effectiveness of the use of technology in education must be accompanied by efforts to overcome the digital divide. Equitable access and increasing digital literacy for all students, including those from disadvantaged families or remote areas, is an essential factor to ensure the benefits of technology can be felt fairly and evenly (Prabowo et al., 2023). The entry into the 21st century / third millennium era saw a paradigm shift in dealing with various phenomena, including current patterns of thinking related to education. The learning process in education today requires different strategies from previous times. The development of science and technology, which is characteristic of this era, has an influence on the entire global order of life. Efforts to improve the learning process need to be realized in order to produce human resources that can support national development.

The learning process is not only in the form of information processing, but must be developed in such a way that it is able to develop human resources that are creative and adaptive to developing demands. This is the responsibility of all parties involved in education, with the role of teachers being very important because teachers are in a direct position to develop students at school. Therefore, teachers have a very important role in providing guidance and organizing student learning situations (Warisno, 2022). By providing wide access to information for educators and students, as well as integrating virtual learning into the learning process, it can improve students' learning experiences. However, the integration of virtual learning in the learning process is limited by the availability of internet access, students' ability to learn independently, and the technical abilities of teachers and students in using Information and Communication Technology (ICT).

To ensure that the integration of virtual learning into the learning process runs effectively: (a) A paradigm shift is needed from focusing on the role of the teacher to focusing on the role of the student, (b) Students and teachers or tutors must have communication skills using computers and proficiency in managing information, and (c) adjustments need to be made to support infrastructure and changes to operational systems and organizational structures (Savira & Suharsono, 2013).

Apart from integrating virtual learning, teachers must also implement a learning approach that adapts to students' learning needs. This approach is known as differentiated learning, which focuses on the learning readiness, interests and skills of each student (Aprima & Sari, 2022). This approach also adapts learning methods, content and strategies to student characteristics, so that each student can learn according to their own speed, interests, talents and abilities. In this way, students can experience a more personalized and relevant learning experience, thereby increasing their motivation and learning outcomes. Differentiated learning uses three main approaches: (1) Content differentiation, where students learn about topics in relation to the curriculum and learning resources, (2) Process differentiation, which includes how students choose their learning style, is a method to help students process ideas and information, (3)

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Product differentiation, where students demonstrate what they have learned (Ningrum et al., 2023).

Implementing differentiated learning is a complex task for teachers. This requires a deep understanding of the individual needs and characteristics of each student. Apart from that, teachers must also provide a variety of learning resources and learning activities so that they can be accessed by all students. The challenges faced by teachers in implementing differentiated learning include the diversity of student characteristics. This requires adjustments in various aspects such as curriculum, teaching strategies, evaluation, and classroom environment. Teachers must be able to accommodate the different learning needs of each student (Halimah et al., 2023).

To ensure that the integration of virtual learning into the learning process runs effectively: (a) A paradigm shift is needed from focusing on the role of the teacher to focusing on the role of the student, (b) Students and teachers or tutors must have communication skills using computers and proficiency in managing information, and (c) adjustments need to be made to support infrastructure and changes to operational systems and organizational structures (Savira & Suharsono, 2013).

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Method

This research uses a quantitative approach with a correlational type. According to Emzir, a quantitative approach is a research method that is based on a positivistic paradigm to develop science, and uses strategies such as surveys that require statistical data. Data collection uses skills instruments for using technology and information in learning and self-efficacy. This research collects data by distributing questionnaires to collect information from respondents, namely students of SMP N 2 Lempuing Jaya. The sampling technique uses random sampling. Research procedures include: (1) preparation and literature review stages, (2) development of research instruments, (3) distribution of questionnaires and data collection, and (4) data analysis. Data analysis using Excel and SPSS applications, statistical analysis using Pearson Product Moment.

Results and Discussions

Research results from 34 respondents who were the research sample. The respondents in the research sample were ninth grade A students. In this research, students' skill levels were found in the use of technology and information in learning.

Table 1. Level of Skills in Using Technology and Information in Learning

Category	Interval	f
High	>81	5
Medium	63≤X<81	27
Low	<63	2

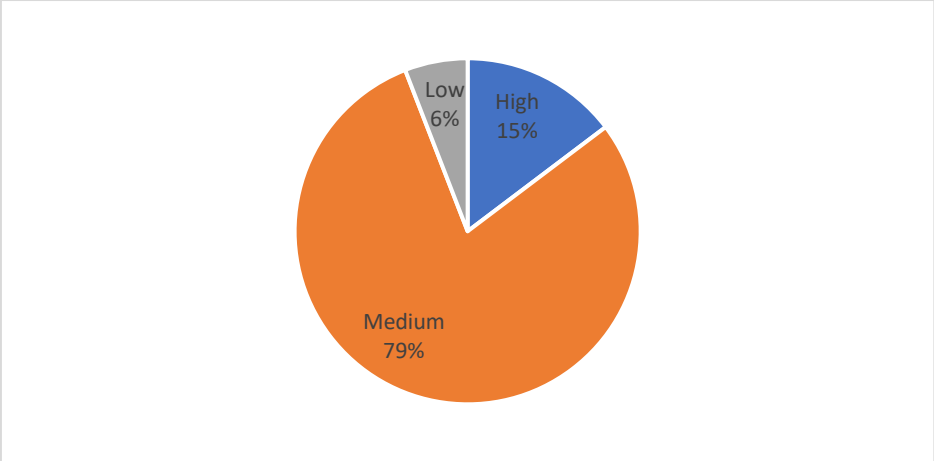

Figure 1. Percentage of Technology and Information Use skills in Learning at SMPN 2 Lempuing Jaya

The data seen in the tabulation in table 1 and the percentages in figure 1, it was found that the skills in using technology and information in learning among students who were research respondents showed that the level of skills in using technology and information in learning of students was generally in the medium category with a total of 27 respondents. (79%). This shows that the level of skills in using technology and information in the learning of class IX A students of SMP N 2 Lempuing Jaya who are the samples needs to be of concern to educators and followed up in optimizing students' skills.

Table 2. Level of self-efficacy student

Category	Interval	f
High	>120	8
Medium	90≤X<120	20
Low	<90	6

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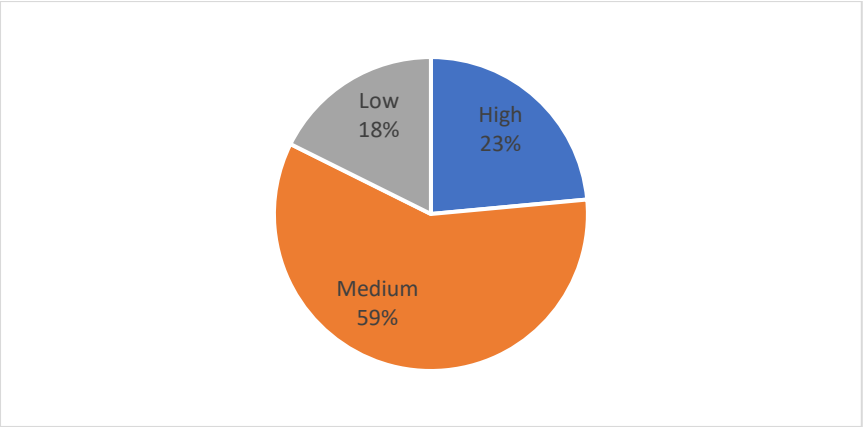
Figure 2. Percentage of self-efficacy student at SMPN 2 Lempuing Jaya



Meanwhile, regarding students' Self-Efficacy abilities, they are generally in the medium category with a total of 20 students (58.8%). This shows that apart from the skills in using technology and information in learning which are generally in the medium category, students' Self-Efficacy abilities are also generally in the medium category. However, the percentage of respondents in the medium category for ability to use technology is greater than for the self-efficacy variable by a difference of (20%). Thus, it can be interpreted that various strategies need to be designed to improve skills in using technology and information in learning as well as increasing students' self-efficacy. These two things are very important for achieving academic success.

Table 3. Correlation between technology use skills and student self-efficacy

		EFD	ICT
EFD	Pearson Correlation	1	-,011
	Sig. (2-tailed)		,950
	N	34	34
ICT	Pearson Correlation	-,011	1
	Sig. (2-tailed)	,950	
	N	34	34

The results of the two data found show that the skills in using technology and information in learning and Self-Efficacy abilities in students do not have a significant relationship. This means that increasing or decreasing self-efficacy has no relationship to skills in using technology and information in learning. In the educational context, the use of information and communication technology has great significance on student learning processes and outcomes, both inside and outside the classroom. This technology enables the acceleration, enrichment, expansion, effectiveness and productivity of learning, which in the end can improve the quality of education as an infrastructure for overall human resource development. By utilizing information and communication technology, every student can learn to preserve and develop their potential. Learning that involves information and communication technology demands creativity and independence, thereby enabling the development of all students' potential. In facing the challenges of global life, creative abilities and independence are needed to adapt to various existing demands. Creativity and self-efficacy are very important aspects in life, for several reasons, such as providing opportunities for individuals to actualize themselves, allowing people to find various alternatives in solving problems, providing life satisfaction, and improving the quality of life. From a cognitive perspective, creativity is characterized by the

ability to think with fluency, flexibility, originality and detail. Meanwhile, from an affective perspective, creativity is characterized by strong motivation, high curiosity, interest in complex tasks, courage in facing risks, resilience in the face of failure, appreciation of beauty, a sense of humor, always wanting to seek new experiences, and respect yourself and others (Munawaroh, 2010).

Information technology plays an important role in the teaching and learning process, but its use must be adjusted to the goals and developments in technology in Indonesia which are very dynamic. In this context, information technology plays a key role in increasing the effectiveness of the learning process by assisting teachers in communicating knowledge and lessons to students. In addition, learning technology can help solve learning problems by using various scientifically developed and diverse learning processes and resources.

Conclusions

Technological advances and the rapid flow of information have influenced the lives of the younger generation, making them very dependent on smartphones for various daily activities. Even though technology can be used for self-empowerment, many of them use it consumptively because of low digital literacy. In education, technology can improve learning outcomes if it is supported by adequate accessibility, appropriate learning strategies such as project-based learning, and the integration of virtual learning. However, the digital divide and limited internet access are still big challenges. To overcome this, a change in educational paradigm is needed, ICT skills training for teachers and students, as well as the implementation of differentiated learning that adapts methods to student characteristics. Apart from that, increasing student self-efficacy is also important for educational success in this digital era.

This research involved 34 respondents from class IX A at SMP N 2 Lempuing Jaya to see the relationship between their self-efficacy abilities and their skills in using technology and information in learning. The research results show that the level of technology and information skills and students' self-efficacy are generally in the medium category. Correlation analysis between these two skills also shows no significant correlation. Information and communication technology has been proven to have a positive influence on student learning processes and outcomes, improving educational standards and human resource capacity. The use of technology in learning requires creativity and independence, this is important for adaptation to global challenges. Information technology also plays an important role in teaching and learning activities, helping to convey knowledge effectively in accordance with technological developments. Self-efficacy abilities are needed so that individuals have a strong belief that they can or will be able to overcome various challenges that are being faced or will be faced.

References

Amelia, R. P., Filiani, R., & Herdi, H. (2014). Self-efficacy terhadap Penggunaan dalam Layanan Bimbingan dan Konseling Pada Guru BK / Konselor SMAN Jakarta Pusat. *Insight Jurnal*, *3*(1), 106–110. https://doi.org/10.21009/INSIGHT.031.18

Aprima, D., & Sari, S. (2022). Analisis Penerapan Pembelajaran Berdiferensiasi Dalam Implementasi Kurikulum Merdeka Pada Pelajaran Matematika SD. *Cendikia : Media Jurnal Ilmiah Pendidikan*, *13*(1), 95–101.

Dhianti, L. (2021). Efektivitas Blended Learning Berbasis LMS dalam Pembelajaran Matematika. Jurnal Riset Pembelajaran Matematika Sekolah, 5(1), 80–84. https://doi.org/10.21009/jrpms.051.10

Emzir (2008), Metodologi Penelitian Pendidikan_Kuantitatif & Kualitatif (Korelasional, Eksperimen, Ex Post Facto, Etnografi, Grounded Theory, Action Research,. Jakarta: Rajagrafindo Persada.

Halimah, N., Hadiyanto, H., & Rusdinal, R. (2023). Analisis Pembelajaran Berdiferensiasi Sebagai Bentuk Implementasi Kebijakan Kurikulum Merdeka. J*urnal Ilmiah Pendiodikan Dasar*, *8*(1), 5019–5033. https://doi.org/10.23969/jp.v8i1.7552

Kennedy, D. M., & Fox, B. (2013). "Digital natives": An Asian perspective for using learning technologies. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, *9*(1), 64–79. http://www.ugc.edu.hk/eng/ugc/policy/policy.htm

Munawaroh, I. (2010). Pemanfaatan Teknologi Informasi Dan Komunikasi Untuk Menumbuhkan Kreativitas Dan Kemandirian Belajar. *Jurnal Teknologi Informasi Dan Komunikasi*, 1–10. http://staff.uny.ac.id/sites/default/files/pemanfaatan teknologi informasi dan komunikasi untuk menumbuhkan kreativitas dan kemandirian belajar di sekolah.pdf

Ningrum, M., Maghfiroh, & Andriani, R. (2023). Kurikulum Merdeka Belajar Berbasis Pembelajaran Berdiferensiasi di Madrasah Ibtidaiyah. *EL Bidayah: Journal of Islamic Elementary Education*, *5*(1), 85–100. https://doi.org/10.33367/jiee.v5i1.3513

Prabowo, R. A., Hita, I. P. A. D., Lubis, F. M., Patimah, S., Eskawida, E., & Siska, S. (2023). Pengaruh Motivasi Terhadap Hasil Belajar Dribbling Permainan Bola Basket. *Journal on Education*, *5*(4), 12648–12658. https://doi.org/10.31004/joe.v5i4.2253

Savira, F., & Suharsono, Y. (2013). Virtual Learning: Pemanfaatan Teknologi Informasi Dan Komunikasi Untuk Meningkatkan Kualitas Pembelajaran. *Journal of Chemical Information and Modeling*, *1*(1), 1689–1699.

Turner, A. (2015). Generation Z: Technology and Social Interest, *Journal Individual Psychology*, *71*(2), 103–113. https://doi.org/10.1353/jip.2015.0021

Wahyuningsari, D., Mujiwati, Y., Hilmiyah, L., Kusumawardani, F., & Sari, I. P. (2022). Pembelajaran Berdiferensiasi Dalam Rangka Mewujudkan Merdeka Belajar. *Jurnal Jendela Pendidikan*, *2*(04), 529–535. https://doi.org/10.57008/jjp.v2i04.301

Warisno, A. (2022). Konsep Mutu Pembelajaran dan Faktor-Faktor yang Mempengaruhinya. *Attractive : Innovative Education Journal*, *4*(1), 1–12. https://doi.org/10.51278/aj.v4i1.442