

Perceptions of the Benefits of ICT on Teacher Performance at Santa Lusia Sei Rotan Middle School

Hotmaida Sidabutar¹, Saud Purba², Irsan Rangkti³

^{1,2,3}Universitas Negeri Medan, Indonesia

Sidabutarhotmaida29@gmail.com

Abstract

Santa Lusia Junior High School is a junior high school in Medan City, precisely in Sei Rotan, where this school is located in the Batang Kuis area, Desli Serdang District, North Sumatra. In the application of the learning process carried out by several existing teachers, there are still many teachers who apply learning models that do not apply digital-based information and communication technology (ICT), where the learning models and methods carried out still use learning methods that is no longer relevant to the development of learning, so that it will affect the ability of students to understand, describe, and master the material taught which in the end students follow the old system by remembering and memorizing, not understanding the learning material, because teachers at Santa Lucy Junior High School apply a memorization and remembering system instead of increasing literacy skills to master the existing material. In addition, some teachers at Santa Lucy Junior High School still do not understand the use and benefits of information and communication technology for the learning process and can be used as new learning models and methods, where the lack of understanding makes teachers at Santa Lucy Junior High School less understand and know that the benefits of information and communication technology are very important for improving the quality of learning, and improving the quality and capacity of teachers for the better. The research method used is a quantitative descriptive research method, where the results of the study explain that the benefits of ICT have a positive and significant effect on teacher performance at Santa Lusia Sei Ratan Junior High School, where by using ICT in the learning process is expected to improve teachers' ability to understand learning material used to increase students' understanding and ability to master learning material.

Keywords

ICT Expediency; Teacher performance



I. Introduction

Teaching is a noble profession, where this profession is required to always serve students in achieving and improving the knowledge provided and taught by the teacher. A teacher plays an important role in educating the next generation and supporting the development of students' knowledge and skills (Prisuna, 2021). In carrying out its functions and duties in educating students to acquire knowledge and competencies, as well as skills, a learning model is needed that is able to increase their interests and talents, in accordance with the current curriculum imposed on teachers by the Ministry of Education, Culture, Research and Technology. In accordance with Minister of Education and Culture Regulation Number 7 of 2022, it is explained that elementary schools, as well as middle schools and high schools must apply the Merdeka curriculum as a reference for implementing the teaching and learning process, where the Merdeka Belajar curriculum is

a type of education that gives students more choices and autonomy in choosing direction of their education.

The learning process becomes more autonomous, relevant, and focused on students' needs and interests when the Independent Learning Curriculum is used. This curriculum provides flexibility to students so that students can develop their interests and talents, where students can choose a major or program at school based on what major they have interests and talents in, so that later students can choose a major and focus on the desired major. To develop and achieve the Merdeka Belajar curriculum so that it meets expectations, teachers are needed who have competencies that match students' interests, where teachers must be able to develop abilities that match the competencies they have, so that teaching and learning methods are needed that are appropriate and in accordance with what the students as participants want educate (Destiana, 2017).

The learning method that is in accordance with improving the Merdeka Belajar curriculum is by applying information and communication technology through various learning modules that are adapted to existing learning materials, where in early childhood and elementary school education requires learning methods using audio-visual, thus facilitating the process of knowledge transformation and information related to the learning material to be delivered (Toyo Jama, 2022). For junior high schools, the learning method that will be delivered can use learning videos that use word processing, presentation and graphic design software, where this kind of learning method can increase student creativity, as well as create students' ability to translate learning material into something real that can be used for applied in social life (Yuniarni, 2022). Learning methods that use software information technology in junior high schools really require knowledge and skills from teachers in installing learning tools and implementing this kind of learning model, so special skills are needed that can make teachers have skills other than teaching according to their competence, namely being able to understand computerized technology. , so that teachers do not have to have knowledge and knowledge according to their field, but also need other competencies in the computer field (Lestari, 2015).

With the habits of teachers who can and have knowledge in the field of computerization, teachers can access and use online tutorials, digital libraries and learning videos to complement their classroom teaching. Teachers can also implement online tests for students, so they can comprehensively monitor students' development and increase in knowledge through digital and computerized applications and systems. Online tests can be created and administered by teachers using special software, which can also be used to track student progress and provide feedback to see the extent of students' ability to understand and master the material. (Pardede, 2020). Having a system or learning method like this will make it easier for teachers to transfer information and knowledge, and will make it easier for students to obtain good information and learning materials and be able to master the material correctly and comprehensively. Santa Lusia Middle School is a first level secondary school in Medan City, specifically in Sei Rotan, where this school is in the Batang Kuis area, Desli Serdang District, North Sumatra. In implementing the learning process carried out by several teachers, there are still many teachers who apply learning models that do not apply digital-based information and communication technology (ICT), where the learning models and methods that are carried out still use learning methods that are no longer relevant to learning developments.

So that it will affect students' ability to understand, describe and master the material being taught which in the end students follow the old system by memorizing and memorizing, not understanding the learning material, because teachers at Santa Lusia

Middle School apply a system of memorizing and memorizing instead of improving literacy skills to master the existing material. Apart from that, some teachers at Santa Lusía Middle School still do not understand the use and benefits of information and communication technology for the learning process and that it can be used as a new learning model and method, where a lack of understanding means that teachers at Santa Lusía Middle School do not understand and know that The benefits of information and communication technology are very important for improving the quality of learning, as well as improving the quality and capacity of teachers for the better.

The problem formulation in this research is the extent to which the benefits of information and communication technology influence teacher performance at Santa Lusía Si Rattan Middle School. The aim of this research is to determine and analyze the influence of the benefits of information and communication technology on teacher performance at Santa Lusía Si Rattan Middle School.

II. Review of Literature

2.1 Benefits of ICT

ICT is the abbreviation of Information and Communication Technology. In this field of technology, hardware and software are used to collect, handle, store, send, and receive digital information. ICT includes various tools and technologies for processing and transmitting data as well as communication tools for interacting with each other and exchanging information over networks (Rahmadin, Aku Nur, Saleh, Muhammad and Esabella, 2022). In the field of education, information and communication technology (ICT) is very important. The use of ICT in education seeks to increase learning efficiency, make information more accessible, and provide a more engaging and interactive learning environment (Hudayati, Nur, Andayani, Yayuk and Junaidi, 2021).

The following are some of the benefits and roles of ICT in education:

1. Development in providing materials through digital applications, where to develop more interesting and dynamic learning materials, teachers can utilize educational software, videos, photos and other digital resources.
2. Accessing information, where through the use of ICT, teachers and students can gain online access to a lot of information. This makes education more relevant and up to date.
3. Improve the classroom learning management system, where the Learning Management System (LMS) allows teachers to efficiently manage assignments, communicate with students, and complete other administrative tasks.
4. Improved evaluation using new applications, namely online applications, where teachers can utilize special software to design and deliver online tests and provide feedback to students.
5. Increasing adaptive learning, where ICT can be used to provide learning that can be adapted to the demands of each student.
6. Teacher training materials, where ICT can be utilized for teacher training, provide educators with the opportunity to brush up on their knowledge of current teaching techniques.
7. Providing learning resources, where teachers and students can access various learning resources, such as e-books, scientific journals, learning videos, and digital libraries.
8. Digital skills development, where ICT helps develop students' technological competence and digital literacy, both of which are very important in today's society (Rahmadin, Aku Nur, Saleh, Muhammad and Esabella, 2022).

The indicators of the benefits of ICT in the world of education include:

1. Increasing student learning outcomes, where ICT is used in the world of education. Whether it has improved student learning outcomes, such as test scores, concept knowledge, and critical thinking skills, is one of the key measures.
2. Increasing student participation, where increasing student involvement in education, especially during distance learning, is a good sign. This includes participation rates for online debates, online learning activities, and attendance rates.
3. Efficiency and productivity, where ICT can help teachers manage teaching and classroom management more effectively. Improvements in assessment and classroom management as well as a decrease in the amount of time required for administrative activities are indicators.
4. Access to educational resources, where wider access to educational resources such as electronic textbooks, scientific publications, learning films, and online libraries is one of the main advantages of ICT. This indicator shows how much this access has increased.
5. Digital skills development, where the development of digital skills measures the extent to which teachers and students have acquired digital literacy and technology skills. Tests or evaluations of a person's technological abilities can be used to measure this.
6. Learning model innovation, where ICT enables more creative teaching and learning techniques including project-based learning, simulations, and adaptive learning. The indicator is the extent to which conventional teaching strategies are replaced by more avant-garde strategies.
7. Teacher professional development, where ICT can be used for teacher preparation and progress. This indicator measures how much training and use of ICT helps instructors improve their knowledge and abilities.
8. Improved evaluation and feedback, where ICT allows teachers to provide feedback to students more quickly and thoroughly. The indicator is how much this evaluation is used for growth by both students and teachers(Ulpha, Ramadhani Andrawina, Annisa, 2020).

2.2 Teacher Performance

Because teachers play an important role in determining how students learn, teacher performance is an important component in the education system. Teacher performance evaluation helps in ensuring that teaching meets student requirements and adheres to a set of criteria(Havivah, Fitriani, Ulfatin, 2017). The following are several factors that influence teacher performance:

1. Academic and professional competence, where the key components of teacher performance are mastery of the material they teach and their understanding of effective teaching techniques. Both information and pedagogical skills need to be continuously updated by teachers.
2. Communication skills, where an effective learning environment is very dependent on the teacher's ability to communicate effectively with students, other teachers, and parents. Teachers must be able to communicate ideas clearly and pay attention to the needs of their students.
3. Adaptability, where teachers must be able to modify their pedagogy in response to the demands of each student as well as changes in the curriculum or class dynamics. Flexible teachers are often more successful in helping students realize their potential.
4. Motivation and care, where a positive learning environment is most likely to be produced by teachers who can inspire their students and care about their growth. This also requires the ability to provide constructive criticism.

5. Understanding student needs, where effective student development assistance comes from teachers who can recognize and meet the needs of all students, including those with special needs or other needs.
6. Student evaluation, where teachers must continually check student progress and assess the efficacy of their teaching using data. This helps in adapting teaching to student needs.
7. Use of technology in teaching, where the effective use of educational technology can improve teaching and teacher performance. Teachers need to master ICT tools and understand how to integrate them into learning.
8. Ethics and professionalism, where all interactions between teachers and students, parents and other teachers must be carried out with ethics and professionalism. Integrity, fairness and respect for diversity are some examples(Hidayah, Nanik, Egar, Ngasbun and Abdullah, 2022).

Indicators of teacher performance in schools are as follows:

1. Student learning outcomes, where student learning scores, and student development in content are important measures of teacher effectiveness in the classroom. Student learning outcomes that have increased can be an indicator of good learning.
2. Student progress, where an important indication is how much academic growth the student experiences during the academic year. This may include achieving learning goals or improving test results.
3. Classroom observations, where when school personnel or educational supervisors observe a class, they can gain a thorough understanding of how the teacher runs it, interacts with students, and presents the curriculum.
4. Student participation and attendance, where the amount of student participation and presence in class may have an impact on how effective the teacher is. A teacher is usually considered effective if they can maintain high levels of student engagement and attendance.
5. Use of learning media, where performance can also be measured by how well a teacher uses and combines learning technology into the classroom as a learning medium.
6. Understanding student needs, where effective teachers are able to recognize and address the unique needs of each student, especially those with special needs or other problems.
7. Professional development, where performance can also be determined by teacher participation in professional development activities such as workshops and training.
8. Comply with school ethics and rules, where teachers must demonstrate honesty, impartiality, and compliance with school rules and morals(Kurniandini, Sholeh, Arifah, Zaidatul and Zakariya, 2022).

III. Research Methods

The research method used is a quantitative descriptive research method, where according to this research the quantitative descriptive research method is a study used to measure and use statistics to describe or identify the features of a phenomenon or variable. By referring to the phenomenon being studied, this strategy seeks to provide research answers to the research questions "what", "how", or "how much"(Siahaan, 2015). The data collection techniques are carried out using observation, interviews and documentation studies, where these three data collection techniques are very necessary to improve data analysis and find solutions related to problems in the research.(Lestari, 2015). Data analysis was carried out using validity and reliability tests, classic assumption tests consisting of normality tests, multicollinearity and heteroscedasticity tests, descriptive

statistical tests, simple linear regression tests and hypothesis tests (t tests). The population in this study were teachers who taught at Santa Lusia Middle School, totaling 32 respondents, where the sampling technique was carried out using the census method, where the sensu method was the entire population taken as sample members, where the number of samples in this study was 32 a teacher who teaches at Santa Lusia Sei Rotan Middle School.

IV. Result and Discussion

4.1 Validity Test

a. Validity Test of ICT Usefulness Variables

Table 1. Valid Test Results for the Usefulness of ICT

Question Items	Calculated r value (Corrected Total Item Correlations)	r value Table	Information
X.1	0.448	0.349	Valid
X.2	0.481	0.349	Valid
X.3	0.380	0.349	Valid
X.4	0.707	0.349	Valid
X.5	0.442	0.349	Valid
X.6	0.593	0.349	Valid
X.7	0.389	0.349	Valid
V.8	0.391	0.349	Valid

(Source: SPSS data processing results, 2023)

According to the table above, it can be concluded that the corrected total item correlations (r test) value is greater than the table r value of 0.349 ($df = nk = 32 - 2 = 30$), where this situation indicates that all the distribution of items from the questions in The ICT usefulness variable data distribution is valid and can be used for simple linear regression testing

b. Validity Test of Teacher Performance Variables

Table 2. Valid Test Results of Teacher Performance

Question Items	Calculated r value (Corrected Total Item Correlations)	r value Table	Information
X.1	0.593	0.349	Valid
X.2	0.683	0.349	Valid
X.3	0.616	0.349	Valid
X.4	0.562	0.349	Valid
X.5	0.677	0.349	Valid
X.6	0.661	0.349	Valid
X.7	0.352	0.349	Valid
V.8	0.594	0.349	Valid

Source: SPSS data processing results, 2023

According to the table above, it can be concluded that the corrected total item correlations (r test) value is greater than the table r value of 0.349 ($df = nk = 32 - 2 = 30$), where this situation indicates that all the distribution of items from the questions in teacher performance variables, all data distributions are valid and suitable for use for simple linear regression testing

4.2 Reliability Test

Table 3. Reliability Test Results

Variable	<i>Cronbach Alpha</i>	N of Items	Information
Benefits of ICT (X)	0.745	8	Reliable
Teacher Performance (Y)	0.823	8	Reliable

Source: SPSS data processing results, 2023

Based on the table above, it can be concluded that the Cronbach Alpha value of the ICT usefulness variable and the teacher performance variable is greater than the significance level of 0.05, so it can be seen that the data distribution is reliable and suitable for submission to simple linear regression tests and other tests.

4.3 Descriptive Statistical Test

Table 4. Descriptive Statistical Test Results

	Descriptive Statistics						
	N Statistics	Minimum Statistics	Maximum Statistics	Mean Statistics	Std. Error	Std. Deviation Statistics	Variance Statistics
Benefits of ICT (X)	32	27.00	40.00	34.9063	.47170	2.66833	7,120
Teacher Performance (Y)	32	30.00	40.00	34.9688	.42475	2.40275	5,773
Valid N (listwise)	32						

Source: SPSS data processing results, 2023

According to Table 4 above, it can be concluded that the minimum value of the ICT usefulness variable (X) is 27 and the maximum value is 40, the mean value is 34.91 which is greater than the standard deviation of 2.67, which indicates that the data distribution is regular and appropriate. , so other forms of data testing are needed. From the table it is explained that the teacher performance variable has a minimum value of 30 and a maximum value of 40, the mean value of 34.97 is greater than the standard deviation of 2.40, which means that the distribution of data for the teacher performance variable is as expected and feasible. submitted for the next test.

4.4 Classic assumption test
a. Data Normality Test

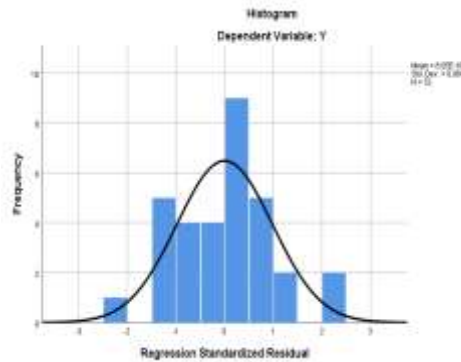


Figure 1. Histogram diagram
 Source: SPSS data processing results, 2023

Based on Figure 1, it can be explained that the distribution of data from each variable

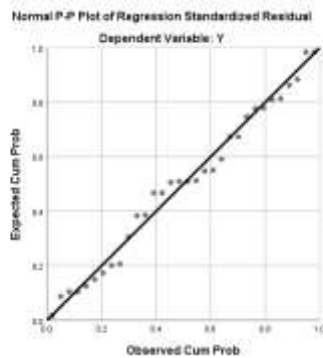


Figure 2. P-Plot Diagram
 Source: SPSS data processing results, 2023

Based on Figure 2, it can be explained that the distribution of data in each variable is still around the horizontal line. This can be concluded that the distribution of data in each variable has met the assumptions of the data normality test.

b. Multicollinearity Test

Table 5. Multicollinearity Test Results

Model	Cilinearity Statistics	
	Tolerance	VIF
(Constant)		
Benefits of ICT (X)	0.695	0.775

Source: SPSS data processing results, 2023

According to Table 5 above, it can be explained that the VIF (Variance Inflation Factors) value is no more (< 10) and the tolerance value of the ICT usefulness variable (X) is no more than 10. This can explain that there is no significant relationship between each independent variable, so that the data distribution of the independent variable does not occur multicollinearity.

c. Heteroscedasticity Test

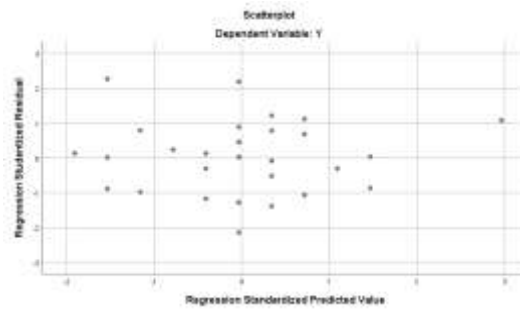


Figure 3. Scatterplot diagram
 Source: SPSS data processing results, 2023

The output results from the image above can be informed that the distribution of data from the existing variables is evenly distributed between the x and y axis variables. This indicates that the existing regression model does not give rise to similar variances or heteroscedasticity does not occur between the variances of the existing regression model.

d. Simple Linear Regression Test

Table 6. Simple Linear Regression Test Results

Model	Unstandardized Coefficients	
	B	Stand. Error
(Constant)	43,524	5,538
Benefits of ICT (X)	0.245	0.158

Source: SPSS data processing results, 2023

From the output of the simple regression results above, a simple linear regression equation appears as follows:

$$Y = 43.524 + 0.245X$$

Where the results of the explanation of the output above are as follows:

1. The constant is 43.524, where this value can be interpreted as meaning that if the value of variable Y = 0, then variables other than variable X can improve teacher performance at Santa Lusia Sei Rotan Middle School.
2. The ICT usefulness variable (X) is 0.245, where this value can be interpreted as meaning that if the usefulness of ICT is increased by one unit, it will be able to increase teacher performance at Santa Lusia Sei Rattan Middle School by 0.245 or 24.5%.

4.5 Hypothesis Test (t Test)

Table 7. Hypothesis Test Results (t Test)

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	43,524	5,538		7,860	,000		
	X	,245	,158	,272	3,549	,032	,695	,775

a. Dependent Variable: Y

Source: SPSS data processing results, 2023

The results of the t test output above can be explained that the calculated t value is 4.549 which is greater than the t table value($df = nk = 32 - 1 = 31$) of 1.695. This explains that the ICT usefulness variable (X) has a positive and significant influence on the teacher performance variable at Santa Lusia Sei Rotan Middle School.

4.6 Discussion

Based on the research results, it can be explained that the calculated t value of 4.549 is greater than the t table of 1.695, where the variable The usefulness of ICT (X) has a positive and significant influence on the teacher performance variable at Santa Lusia Sei Rotan Middle School. This is in accordance with research (Siahaan, 2015) which states that the benefits of communication and information technology in the world of education can improve teachers' abilities in increasing teachers' understanding of the learning process and increasing understanding of the material so that students can understand and know the learning material well. This situation is in line with research (Pattola et al., 2022) which states that if ICT can be used properly by teachers, it will be able to significantly increase understanding of the material and can help students understand and master the material in a literate way, so that they will be able to master the knowledge they have because the teacher changes the learning method by changing the unidirectional communication system, to intensive communication. through digital and applicable technology that can provide clarity and information, so that students can understand the learning material completely and comprehensively in order to increase interest and talent in subjects according to the students' hopes and desires.

IV. Conclusion

Based on the research results, it can be explained that the benefits of communication and information technology (ICT) have a positive and significant effect on teacher performance at Santa Lusia Sei Rotan Middle School. In the application of the learning process carried out by several existing teachers, there are still many teachers who apply learning models that do not apply digital-based information and communication technology (ICT), where the learning models and methods carried out still use learning methods that is no longer relevant to the development of learning, so that it will affect the ability of students to understand, describe, and master the material taught which in the end students follow the old system by remembering and memorizing, not understanding the learning material, because teachers at Santa Lucy Junior High School apply a memorization and remembering system instead of increasing literacy skills to master the existing material. In addition, some teachers at Santa Lucy Junior High School still do not understand the use and benefits of information and communication technology for the learning process and can be used as new learning models and methods, where the lack of understanding makes teachers at Santa Lucy Junior High School less understand and know that the benefits of information and communication technology are very important for improving the quality of learning, and improving the quality and capacity of teachers for the better. The research method used is a quantitative descriptive research method, where the results of the study explain that the benefits of ICT have a positive and significant effect on teacher performance at Santa Lusia Sei Ratan Junior High School, where by using ICT in the learning process is expected to improve teachers' ability to understand learning material used to increase students' understanding and ability to master learning material.

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