

# The Effect of Teacher Competency and Teacher ICT Ability on Junior High School Teacher Performance

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## To Cite This Article:

Afif, S. N., Utaminingsih, S., and Hariyadi, A. (2026). The Effect of Teacher Competency and Teacher ICT Ability on Junior High School Teacher Performance. *ICCCM Journal of Social Sciences and Humanities*, 5(3). 1-8. <https://doi.org/10.53797/icccmjssh.v5i3.1.2026>

**Abstract:** This study aims to (1) analyze the influence of teacher competence on teacher performance; (2) analyze the influence of teacher ICT skills on teacher performance; (3) analyze teacher competence and teacher ICT skills together on teacher performance. This study uses a quantitative approach with an ex-post facto design. The research sample was 155 junior high school teachers in the Kudus City District. The results of the study indicate that teacher competence has a positive effect on teacher performance from the t-test obtained t count (7.456) > t table (1.976). Teacher ICT skills have a positive effect on teacher performance from the t-test obtained t count (9.855) > t table (1.976). Teacher competence and teacher ICT skills simultaneously (together) have a positive effect on teacher performance, from the F-test showing a significance figure of  $0.000 < \text{probability } 0.05$ , F count value (76.502) > F table (3.10). Teacher competence and teacher ICT skills simultaneously (together) have a positive effect on teacher performance of 0.502 (R<sup>2</sup>). Based on the results of the study, it can be concluded that teacher competence and teacher ICT skills have an effect on teacher performance in public junior high schools throughout Kudus City District, Kudus Regency.

**Keywords:** teacher competence, ICT skills, teacher

## 1. Introductions

Education plays an important role in human life, education transforms values such as religious values, culture, science, technology and skills, so that humans have dignity, knowledge and noble character (Pitriyani, 2023). Education is a process of knowledge transformation that includes various aspects and elements in it to support learning activities (Muskania & Zulela MS, 2021).

Teachers are the spearhead in education, because teachers are the ones who deal directly with students in the learning process (Wardany & Rigianti, 2023). Referring to the provisions of Law Number 14 of 2005 concerning Teachers and Lecturers, teacher competencies consist of 4 competencies, namely Pedagogical, Personality, Social, and Professional. Pedagogical competence is one of the competencies that teachers must master because this competence is the ability to manage student learning (Wahyuningsih, 2021).

Personality competence is a personal ability that reflects a steady, stable, mature, wise and authoritative personality, becoming a role model for students (Mukhtar & MD, 2020). Social competence is the skill possessed by teachers in communicating and interacting effectively and efficiently with students, fellow teachers, parents or guardians of students, and the surrounding community (Ratnasari, Sutjahjo, Susanti, Tanjung, & Ismanto, 2021). Professional competence is the ability to master subject matter broadly and deeply, including expertise in one's field, mastery of the material to be taught along with its learning methods, as well as having responsibility for one's duties and the ability to work together with fellow teachers (Nurlela & Amelia, 2021).

As educators in the 21st century and the future, teachers face challenges to accelerate adaptation to developments in information and communication (Yahya Pahriadi, Holten Sion, & Abdul Rahman Azahari, 2021). The learning process in the classroom and classroom management in this era must be in line with the advances in information and communication technology that have developed (Pertwi, Kumala, & Iswahyudi, 2021).

Teacher performance reflects the attitudes, skills, values, and knowledge that teachers have in carrying out their duties and functions. This can be seen through their appearance, actions, and work results (Susilo, Futiarso, Jatmiko, Su'ad, & Hariyadi, 2023). Teacher performance also describes their ability to carry out tasks at school, which is reflected in various actions taken during the learning process (Muspawi, 2021). Teacher performance is influenced by various factors, both internal and external. Internal factors can be low work motivation, lack of knowledge, or limited insight (Ritonga, 2021). Meanwhile, external factors include coworkers, leaders, and the workplace environment. Teachers' morale is often influenced by the motivation of their colleagues, as well as the conditions of the work environment.

According to the explanation above, it can be concluded that there is a relationship between teacher competence and teacher ICT skills with teacher performance as educators who are required to always be creative and innovative in accordance with the times. Based on this, a study was conducted with the title "The Effect Of Teacher Competency And Teacher Ict Ability On Junior High School Teacher Performance".

## 1.1 Conceptual framework

Teacher competence is a basic skill needed in carrying out their duties and responsibilities, including educating, training, guiding, and facilitating student learning activities so that learning takes place effectively and efficiently. These competencies include aspects of knowledge, skills, and behavior (Setyanti, 2020). Based on the Law of the Republic of Indonesia No. 14 of 2005 concerning Teachers and Lecturers and Government Regulation No. 14 of 2005 concerning National Education Standards (SNP), a teacher is required to have four main competencies, namely personality competence, pedagogical competence, professional competence, and social competence.

Pedagogical competence is a basic skill that a teacher must have to manage the student learning process (Mustafa, 2024). This includes a deep understanding of student characteristics, the ability to design and implement effective learning, as well as skills in evaluating learning outcomes and developing student potential (Nurhalisyah, 2024). This competency has a crucial role, considering that teachers contribute greatly to the intellectual life of the nation (Nuzulaeni & Susanto, 2022). Teachers must have the following pedagogical competencies; mastering the characteristics of students, mastering learning theories and principles of educational learning, developing curriculum, implementing educational learning activities, developing the potential of students, communicating with students, carrying out assessment and evaluation.

Personality competence refers to the teacher's ability to demonstrate behavior that reflects noble values in everyday life (Noor, 2021). Teachers must make a philosophy of life as a guide in order to be an example in upholding noble values (Setyanti, 2020). With a strong and stable personality, teachers can be role models for students and society, so they deserve respect and emulation. Teacher personality plays an important role in determining student learning success (Zulfahmi, Marantika, & Zulher, 2022). A teacher must have the following personality competencies: The teacher is responsible for improving his/her faith and piety in accordance with his/her religion and beliefs, The teacher must realize his/her superiority over others and develop self-confidence, The teacher must adapt to the uniqueness of students and the community, The teacher acts as a facilitator, The teacher must provide opportunities for students to learn individually or in groups, and The teacher places students in real situations. Social competence refers to the teacher's ability to interact and communicate effectively with students, fellow teachers, education staff, parents or guardians of students, and the surrounding community as part of society (Setyanti, 2020). social competence that must be possessed by a teacher includes: Ability to adapt to the environment, Empathy and polite communication, Effective social interaction, Understanding of human relations, Mastery of social psychology, Ability to work together in groups (Madjid, 2016).

Professional competence refers to the teacher's ability to master learning materials broadly and deeply (Kuswibowo, 2021). Teacher professional competence includes a number of skills that must be possessed in order to carry out teaching tasks effectively. This competency is related to the ability to master teaching materials in depth and breadth (Lestari, 2023) , including an understanding of the scientific substance underlying the curriculum. In addition, teachers must also have responsibility for their duties and be able to establish togetherness with fellow teachers (Nurlela & Amelia, 2021). Teacher professional indicators are; Mastering teaching materials listed in the school curriculum, Understanding relevant scientific structures, concepts, and methods, Able to apply scientific concepts in everyday life, Understanding the relationship between various concepts in the subjects taught, Mastering research techniques and critical analysis to deepen understanding of material in the field of study.

ICT is a combination of information technology and communication technology (Sarinten, 2023). From the perspective of educational technology development, ICT is an integrated technology as a further evolution of print, audiovisual, and computer-based technologies (Yahya Pahriadi et al., 2021). In the learning process, teachers can utilize information and communication technology (ICT) in various aspects, including as learning media and learning resources. As a medium, ICT functions as a tool that helps teachers deliver material more effectively. Learning media is a tool used to explain certain parts of the learning program that are difficult to understand only by verbal explanation (Wahyuni, Haryoko, & Arfandi, 2024). Information and communication technology (ICT) has a crucial role in modern education because it improves the quality and effectiveness of learning (T, Manalu, & Amini, 2022). By utilizing online learning media, students can be familiar and proficient in utilizing available technology, such as operating online learning software, searching for information efficiently, managing data, and communicating through digital platforms (Julaikah, Hariyadi, & Suad, 2024). Information and communication technology (ICT) in education includes various devices and technologies, both software and hardware. These include learning management systems (LMS), simulations, as well as devices such as computers, tablets, and interactive whiteboards (Wahyu, 2024). The digitization of learning materials is also supported by e-books, online databases, and various internet-based tools. Teacher performance is the behavior and activities of teachers in the learning process, which includes planning, implementing, and assessing student learning outcomes (Hafidulloh et al, 2021). The success of education and students is highly dependent on the quality of teacher performance, so educational institutions need to continue to develop and improve the abilities of their educators (Yuliani, Hariyadi, & Utaminingsih, 2024). Performance reflects the work or performance of a teacher in carrying out their duties. There are various factors that influence individual performance, including teacher performance, including: 1) ability, 2) motivation, 3) support received, 4) the nature of the work they carry out, and 5) their relationship with the organization (Indriawati et al., 2022). Performance needs to be researched from things that affect performance, so that efforts in the framework of performance become more effective and efficient (Yuliani et al., 2024). In this study, teacher performance is defined as performance in the implementation of teaching tasks with four indicators, namely: (1) performance in learning planning, (2) performance in learning implementation, (3) performance in learning assessment, and (4) performance in professional development. Based on this explanation, the framework is explained below;

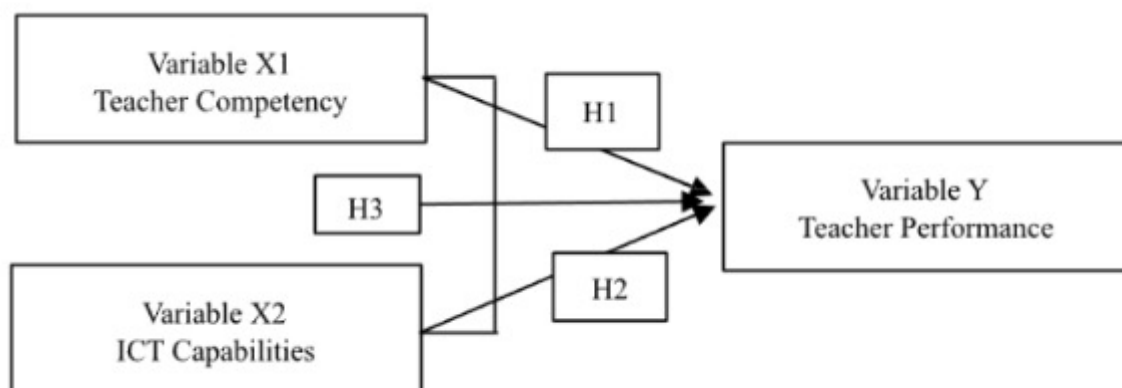


Figure 1. Conceptual frameworks

## 1.2 Research objectives

The purpose of this study based on the formulation of the problem above is to analyze the effect of teacher competence on teacher performance in public junior high schools in the sub- district of Kudus City, Kudus Regency. To analyze the effect of teachers' ICT skills on the performance of teachers in public junior high schools in the Kudus City sub-district of Kudus Regency. and To analyze how much influence teacher competence and teacher ICT skills together have on the performance of public junior high school teachers in the Kudus City sub- district of Kudus Regency.

## 2. Methodology

### 2.1 Research design

The approach used in this research is quantitative. This type of research design is ex-post facto. Ex-post facto research is a study in which the independent variable already exists when the researcher begins to observe the dependent variable in a study.

### 2.2 Respondents of the study

The population in the study were teachers with ASN and Non-ASN status in State Junior High Schools in Kudus City, totaling 233. The sample of this study was 155 teachers in public junior high schools in Kudus City District.

**Table 1.** Table 1 Research Population and Sample

No	School Name	Population	Random Sampling	Sample
1	SMP 1 Kudus	49	49/233X155	32
2	SMP 2 Kudus	45	45/233X155	30
3	SMP 3 Kudus	46	46/233X155	31
4	SMP 4 Kudus	49	49/233X155	32
5	SMP 5 Kudus	44	44/233X155	30
Total		233		155

### 3. Findings and Discussion

The following are the results of data collection on the effect of teacher competence, teacher ICT skills on teacher performance:

#### 3.1 Knowledge

The variable descriptions in the descriptive statistics used in this study consist of the minimum, maximum, mean and standard deviation values of one dependent variable, namely teacher performance and two independent variables, namely teacher competence and teacher ICT skills.

**Table 2.** Table 2 Descriptive Statistics

N	Minimum	Maximum	Mean	Std. Deviation	
Teacher Competency	155	90	104	96.80	2.562
Teacher ICT Skills	155	87	102	93.94	2.509
Teacher Performance	155	88	97	90.95	1.619
Valid N (listwise)	155				

Based on the table of normality test results with the Kolmogorov-Smirnov Test, the Asymp. Sig. As large as 0.200 which means more than 0.05, it can be concluded that the data is normally distributed. The normality test results can be seen in the following table:

**Table 3.** Table 3 One-Sample Kolmogorov-Smirnov Test Results

N		155
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	1.14282303
Most Extreme Differences	Absolute	.064
	Positive	.064
	Negative	-.035
Test Statistic		.064

This multicollinearity test is intended to test whether or not there is a correlation between independent variables. The multicollinearity test results that have been carried out using SPSS 25.00 can be seen in table 4 below:

**Table 4.** Multicollinearity Test Results

Model	Unstandardized Coefficients (B)	Unstandardized Coefficients (Std. Error)	Standardized Coefficients (Beta)	t	Sig.	Collinearity Statistics (Tolerance)	Collinearity Statistics (VIF)
1 (Constant)	30.634	4.927		6.218	.000		
Teacher Performance	.270	.036	.427	7.456	.000	1.000	1.000
Teachers' ICT Skills	.364	.037	.564	9.855	.000	1.000	1.000

From the table above, it can be seen that: the teacher competency variable has a tolerance value of 1.000 and a VIF value of 1.000. This shows that there is no multicollinearity in the regression model analysis. This shows that there is no multicollinearity in the regression model.

The heteroscedasticity test aims to test whether in a regression model there is an inequality of variance from one observation to another. The way to detect the presence or absence of heteroscedasticity, among others, is by using the Glejser test. The results of the Heteroscedasticity test that has been carried out using SPSS 25.00 can be seen in table 4.4 below

**Table 5.** Heteroscedasticity Test Results

Model	Unstandardized Coefficients (B)	Unstandardized Coefficients (Std. Error)	Standardized Coefficients (Beta)	t	Sig.
1 (Constant)	-3.507	2.964		-1.183	.239
Teacher Performance	.023	.022	.086	1.070	.286
Teachers' ICT Skills	.023	.022	.083	1.034	.303

Based on the output above, it is known that the significance value (Sig.) for the teacher competency variable (X1) is 0.286 while the significance value (Sig.) of the teacher ICT ability variable (X2) is 0.303 Because the significance value (Sig.) of the two variables above is greater than 0.05, it can be concluded that there is no heteroscedasticity problem.

The t test is conducted to test the effect of the independent variables partially (separately) on the dependent variable. The trick is to test the constant regression coefficient of each independent variable using the t-test. The results of data processing carried out using SPSS 25.00 can be seen in the following table.

**Table 6.** Results of t test

Model	Unstandardized Coefficients (B)	Unstandardized Coefficients (Std. Error)	Standardized Coefficients (Beta)	t	Sig.
1 (Constant)	30.634	4.927		6.218	.000
Teacher Performance*	.270	.036	.427	7.456	.000
Teachers' ICT Skills	.364	.037	.564	9.855	.000

\*Dependent Variable: Teacher Performance

From table 6 above it can be seen that:

The significance value (Sig.) of the teacher competency variable (X1) is 0.000 and the t value is 7.456 Because the significance value (Sig.)  $0.000 < 0.05$  probability, it can be concluded that there is an influence of the teacher competency variable (X1) on the teacher performance variable (Y), or the hypothesis is accepted. Because the value of  $t_{count} > t_{table}$  (1.976), it can be concluded that there is an influence of the teacher competency variable (X1) on teacher performance (Y).

The significance value (Sig.) of the ICT ability variable (X2) is 0.000 and the calculated t value is 9.855 Because the significance value (Sig.)  $0.000 < 0.05$  probability, it can be concluded that there is an influence of the teacher ICT ability variable (X2) on the teacher performance variable (Y), or the hypothesis is accepted. Because the value of  $t_{count} > t_{table}$  (1.976), it can be concluded that there is an influence of the teacher ICT ability variable (X2) on the teacher performance variable (Y).

Simultaneous test or F test is used to determine the effect of independent variables together (simultaneously) on the dependent variable. The results of multiple regression tests / F tests that have been carried out using SPSS 25.00 can be seen in the following table:

**Table 7.** F Test Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	202.456	2	101.228	76.501	.000b
	Residual	201.131	152	1.323		
	Total	403.587	154			

a. Dependent Variable: Teacher Performance

b. Predictors: (Constant), Teacher ICT Skills, Teacher Competence

Based on the table of F test results above, it can be seen that the significance value (Sig.) is  $0.000 < 0.05$  probability. It can be concluded that the teacher competency variable (X1), the teacher ICT ability variable (X2) simultaneously (together) has an influence on the teacher performance variable (Y). When viewed from the F count of  $76.501 > F$  table (3.05), it can be concluded that teacher competence (X1) and teacher ICT skills (X2) simultaneously affect teacher performance (Y).

Determinant Coefficient (R<sup>2</sup>) This test is used to see the contribution (the amount of contribution) of the independent variable, namely teacher competence (X1), teacher ICT ability variable (X2) to the dependent variable, namely teacher performance (Y). Then the results of the coefficient of determination (R<sup>2</sup>) test were carried out to determine the magnitude of this influence using SPSS 25.0. The results can be seen in the following table;

**Table 8.** Determinant Coefficient Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.708a	.502	.495	1.150

a. Predictors: (Constant), Teacher ICT Skills, Teacher Competence

From the table it can be seen that the coefficient of determination (contribution) of the effect of teacher competency variables and teacher ICT skills simultaneously (together) on teacher performance variables (R square) is 0.502 This means that the teacher competency variables, and teacher ICT skills together have an influence on teacher performance variables by 50.2% and 49.8% influenced by other factors.

#### 4. Conclusions and recommendations

Based on the research results and on the basis of hypothesis testing, the overall thesis writing can be concluded as follows. Teacher competence is proven to have an influence on teacher performance in public junior high schools in the Kudus City sub-district of Kudus Regency by 18.3%. Teachers' ICT skills are proven to have an influence on teacher performance in public junior high schools in the Kudus City sub-district by 31.9%. And teacher competence and teacher ICT skills are simultaneously proven to have an influence on teacher performance in public junior high schools in the Kudus City sub-district of Kudus Regency by 50.2%.

Researchers provide the following suggestions; teacher competence must continue to be developed through various trainings, seminars, or further studies to improve professionalism in carrying out tasks. teachers need to improve skills in utilizing information and communication technology by attending training, discussing with peers, or learning independently to support the learning process, well, and further research can expand population coverage to include private schools, conduct a more in-depth analysis of research findings, and add or replace independent variables.

#### Acknowledgement

The author would like to thank all those who have helped in the completion of this paper, hopefully the help and support provided can be useful and can provide the best results.

#### Conflict of Interest

The author declares there is no conflict of interest

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