

The Influence of Teacher Competency on Student Learning Outcomes

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Abstract

This research was motivated by the low cognitive learning outcomes of students at SD Rancamanyar 03 Bandung. The aim of this research is to determine and analyze whether there is an influence of teacher competence on students' cognitive learning outcomes at SD Rancamanyar 03 Bandung. This research uses a quantitative approach, descriptive method, data collection techniques using questionnaires and observation. Several statistical data analysis procedures that will be carried out include: Instrument Analysis (data validity and data reliability), Classic Assumption Test, namely: Data Normality Test, Data Linearity Test, Heteroscedasticity Test. And Statistical Analysis, namely Simple Linear Regression Analysis, Correlation Coefficient Analysis, Descriptive Statistical Analysis and Hypothesis Testing t Test. The results of this research indicate that teacher competency has a significant impact on student cognitive learning outcomes. This is based on the results of statistical testing with SPSS on teacher competency, the calculated t value = $2.210 > 2.035 = t$ table, and Sig. = $0.03 < 0.05$ (5%), so H_0 is rejected and H_a is accepted. These data show that teacher competence has a significant effect on student cognitive learning outcomes.

Keywords: *Teacher Competency, Cognitive Learning Outcomes*

Introduction

Education problems in Indonesia generally lie with teachers or educational staff. There are various things that lead to the emergence of an educational problem, one of which lies in the competence of teachers. The emergence of such problems certainly violates the statutory regulations as a teacher, namely in Law Number 14 of 2005 concerning Teachers and Lecturers article 10 paragraph (1) teacher competence includes pedagogic competence, personality competence, social competence, and professional competence obtained through professional education (Nur & Fatonah, 2022).

Teachers as part of education have a very important position in achieving educational goals in schools. The goals of school institutions can be achieved optimally if teachers have pedagogical competence, personality competence, social competence and professional competence. In the world of education, it is not only students who are required to develop their potential, but the role of teachers is also required to have competence (Yunus, 2016). The teacher's style in teaching in the classroom is generally influenced by the teacher's own perception about teaching. If a teacher has the perception that teaching is only conveying knowledge, then in teaching the teacher tends to place students as vessels that must be filled by the teacher. In practice, the teacher explains the lesson and the students pay attention, then the students are tested on their ability to grasp the material taught by the teacher (Suyanto & Jihad, 2013). If students are unable to give answers correctly, then mistakes tend to be placed on the students (Tarihoran & Naibaho, 2023)

According to (Usman, 2002), teacher competency is a position or profession that requires special skills as a teacher. This work cannot be done by people who do not have the skills to carry out activities or work as a teacher. This work cannot be done by people who do not have the skills to carry out activities or work as a teacher.

Competency development according to Hopkins in (Suyanto & Jihad, 2013) is "a way for teachers to continuously assess themselves while remaining open to changes in the times that are occurring". What this means is that a teacher must realize that humans are people who easily accept change. By opening themselves to continuous development, teachers will become competent people in their profession. Teachers have an important role in changing students' behavior and thinking towards achieving educational goals. Therefore, teachers must be reviewed for their readiness to organize learning and competence in organizing learning (Inayah et al., 2013). The competence possessed by a teacher is an important factor in achieving student learning achievement. In other words, student learning achievement is a reflection of a teacher's success in teaching. Learning outcomes are composed of two words, namely results and learning. In the Big Indonesian Dictionary, results mean the quality obtained from an activity. Meanwhile, learning is a process experienced by a person which is characterized by relatively permanent changes in behavior (Umar, 2020).

Learning outcomes are the maximum benchmark that students have achieved after studying for a predetermined time (Nuraeni & Ainiyah, 2023). Apart from that, learning outcomes can also be used as a tool to determine students' abilities and qualities after carrying out the learning process. Student success in learning can be seen from the learning outcomes of the student concerned. Teachers need to conduct learning outcomes evaluations to determine student learning outcomes. Through this evaluation, student learning outcomes can be seen during the learning process. High learning outcomes will be very useful as a foundation for students when they will continue to a higher level of education or enter the world of work (Sudana & Wesnawa, 2017).

Learning outcomes are the abilities that students have after receiving learning experiences. Learning abilities include cognitive, affective and psychomotor aspects. Apart from that, learning outcomes are also used to determine students' abilities and qualities after carrying out the learning process. Teachers need to carry out evaluations of learning outcomes. Through the evaluation of learning outcomes, students' learning outcomes can be seen during the teaching and learning process. Whether a student is successful or not in learning activities can be seen in the learning process, where the learning process determines student learning outcomes (Nabillah & Abadi, 2020). In relation to activities to obtain learning outcomes, teacher competence plays a very important role. The teaching and learning process and the results of teaching students are not only determined by the school, its pattern, structure and curriculum, but are largely determined by the competence of the teachers who guide and teach the students. Competent teachers will be better able to manage their classes so that students' learning is at an optimal level (Permatasari et al., 2022).

Based on initial observations carried out at SDN Rancamanyar, it was found that student learning outcomes at SDN Rancamanyar 03 were still low, in the learning process some students were less enthusiastic about participating in learning, the lack of motivation to learn was evidenced by the occurrence of noise during learning, several students coming in and out during class hours. . The low student learning outcomes are shown by the mid-semester exam scores for the 2022/2023 academic year, with more than half of all students scoring less than KKM 60.

Researchers assume that one of the causes of low student learning outcomes is due to the competence of teachers. The competence of teachers at SDN Rancamanyar 03 does not meet the standards, there are still many teachers who have not been certified, some teachers

during the learning process still lack variety in using learning methods, personality competence where teachers are often late for class when the lesson change hour rings, social competence where teachers are still lack of interaction with the community who can help in the learning process, and professional competence where teachers do not link lesson material with students' daily lives. Apart from that, there are still many shortcomings in the learning process, one example is that teachers often teach using the lecture method which students feel is less interesting, and class management is still lacking.

The aim of this research is to determine and analyze the influence of teacher competency on student learning outcomes at SDN Rancamanyar 03. Research related to teacher competency and student learning outcomes has previously been researched by (Hapsari & Prasetio, 2017) that teacher competency has a significant positive influence on student learning achievement. Research (Makaliwe & Lempas, 2023) shows: (1) There is a significant influence between teacher competence and student learning outcomes in class X SMA Negeri 1 Tondano (2) There is a significant influence between learning facilities and student learning outcomes in class X SMA Negeri 1 Tondano (3) There is a significant influence between teacher competence and learning facilities on student learning outcomes in class X SMA Negeri 1 Tondano. Research (Mukhtar & Luqman, 2020) shows that competence has a positive and significant effect on the performance of high school teachers in Makassar City. This shows that competence in the form of pedagogical, personality, social and professional competence has an influence on teacher performance and supports improving the performance of high school teachers in Makassar city. The difference between research conducted by researchers and previous researchers lies in the focus of learning outcomes and elementary school education levels, this is a novelty in this research.

Method

The approach in this research is a quantitative approach, while the method used in this research is a descriptive method. The research population was 165 students in grades I-VI Rancamanyar 03 Bandung, while the sample taken was 35% of the total population of students in grades V and VI at SD Rancamanyar 03 Bandung as many as 165, because the total population exceeded 100. So, $165 \times 35\% = 49$ students, so the researcher took a sample of 49 students (Arikunto, 2013). Data collection techniques used in this research include observation, questionnaires and documentation (Lexy J Moleong, 2013).

In this research, the research technique used is descriptive statistical methods. Several statistical data analysis procedures that will be carried out include: Instrument Analysis (data validity and data reliability), Classic Assumption Test, namely: Data Normality Test, Data Linearity Test, Heteroscedasticity Test. And Statistical Analysis, namely Simple Linear Regression Analysis, Correlation Coefficient Analysis, Descriptive Statistical Analysis and Hypothesis Testing t Test (Sugiyono, 2022).

Results

General Overview of SD Rancamanyar 03 Bandung

Rancamanyar 03 Elementary School Bandung is located at Jl. Cilebak, Rancamanyar, Kec. Baleendah, Kab. Bandung Province West Java has a vision for SDN Rancamanyar 03, namely the realization of SDN Rancamanyar 03 as a learning community that is highly disciplined, intelligent, skilled, physically and spiritually healthy and has noble character and noble character. The mission of SDN Rancamanyar 03 is: 1.) Increasing teacher professionalism through KK activities. 2.) The quality of graduates increases every year. 3.) Increasing the role of schools

as cultural centers. 4.) Improving sports and arts results through continuous coaching. 5.) Increasing religion through Islamic boarding schools, congregational prayers and adopting a clean and healthy lifestyle. 6.) Increasing community participation and empowering school community commitment.

Analysis of the Influence of Teacher Competency on Student Learning Outcomes

To find out the reality of the responses of class IV, V and VI students at Rancamanyar Elementary School, Bandung, regarding teacher competence and student learning outcomes, data was obtained from a questionnaire distributed to 49 respondents, namely the students sampled in this research. Indicators for variable Researchers carried out descriptive statistical analysis, namely the distribution of answers from respondents. This grouping of respondents' assessments is intended to determine each questionnaire's variables, by looking at the average, assessed by respondents with the criteria of very good, good, quite good and not good.

1. Validity and Reliability Test

The validity test was carried out using SPSS 16.0, then comparing the calculated r of each question item with the r table with n = 49 with a significance level (α) = 0.05 or 5% with the assumption that if the calculated $r \geq r$ table then the item is valid .

Table 1 Data on Teacher Competency Validation Test and Cognitive Learning Outcomes

Variable	Indicator	R Count	R Table	Information
Teacher Competenc y (X)	X1	0,631	0,324	Valid
	X2	0,630	0,324	Valid
	X3	0,543	0,324	Valid
	X4	0,568	0,324	Valid
	X5	0,421	0,324	Valid
	X6	0,336	0,324	Valid
	X7	0,576	0,324	Valid
	X8	0,431	0,324	Valid
	X9	0,411	0,324	Valid
	X10	0,510	0,324	Valid
	X11	0,527	0,324	Valid
	X12	0,397	0,324	Valid
Cognitive Learning Outcomes (AND)	Y1	0,349	0,324	Valid
	Y2	0,438	0,324	Valid
	Y3	0,604	0,324	Valid
	Y4	0,339	0,324	Valid
	Y5	0,530	0,324	Valid
	Y6	0,516	0,324	Valid
	Y7	0,523	0,324	Valid
	Y8	0,541	0,324	Valid
	Y9	0,454	0,324	Valid
	Y10	0,364	0,324	Valid
	Y11	0,593	0,324	Valid
	Y12	0,386	0,324	Valid

Based on Table 1 above, it shows that there are 2 variables that are used as research material, the two variables studied have the same number of statements, namely 12 statement items. From each statement item on each variable, both independent and dependent, it turns

out that the calculated r value is greater than the r table, so the data obtained in the field can be declared valid.

The reliability test is to measure a questionnaire which is an indicator of a variable. A questionnaire is said to be reliable if a person's answer to a statement is consistent or stable over time. A variable is said to be reliable if it provides value *Cronbach's Alpha* $> 0,05$

Table 2 Reliability Test Results

Variable	<i>Cronbach's Alpha</i>	<i>Role of Thumb</i>	Information
Teacher Competency (X)	0,722	0,05	Reliebel
Cognitive Learning Outcomes(Y)	0,658	0,05	Reliebel

Based on Table 2, it shows that this test was carried out in variables, not in terms of statement items, for each variable the results can be seen as values *cronbach's alpha* greater than 0.05 then it can be said to be reliable.

2. Classic assumption test

This test was carried out to see whether the data used had deviations from classical assumptions or not. In the assumption test carried out, there were 3 tests used, namely the normality test, linearity test and heteroscedasticity test. The results of the 3 tests used are;

Table 3 Normality Test Results

<i>Asymp.Sig</i>	Criteria	Information
0,312	$>0,05$	Normally distributed

The normality test is used to test whether in the regression model, the confounding or residual variables have a normal distribution. The normality test method that can be used to test residual normality is *Kolmogorov-Smirnov* (KS). Based on Table 3, it shows that the resulting value for *Asym.sig* is 0.312, which can be said to be a value of *asym.sig* of 0.312 which is greater ($>$) than 0.05, so it can be said that the data is normally distributed.

According to Sugiyono and Susanto (Sugiyono, 2017) the linearity test can be used to find out whether the dependent variable and the independent variable have a significant linear relationship or not. The linearity test can be carried out via *test of linearity*

Table 4. Linearity Test Results

Say.	Criteria	information
0,819	$>0,05$	Linearity

Based on the results of the linearity test, the *Sig* value is known *deviation from linearity* amounting to $0.819 > 0.05$, it can be concluded that there is a linear influence between teacher competence and student cognitive learning outcomes. The heteroscedasticity test aims to test whether in the regression model there is inequality of variance from the residuals or other observations. There are several ways to determine whether there is heteroscedasticity in the regression model, but in this study the Glejser test was used.

Table 5. Heteroscedasticity Test Results

Say.	Information
0,754	Heteroscedasticity does not occur

Based on Table 5, it shows that this test uses the Glejser test method whose value is seen from t sig. The results of the data above show a value of 0.754, so the sig is greater than 0.05, so it can be said that the data does not have heteroscedasticity.

3. Statistic analysis

Correlation coefficient testing aims to state the degree of linear relationship (unidirectional not reciprocal) between two or more variables using the Pearson correlation coefficient approach. The analysis results obtained are;

Table 6 Correlation Coefficient Analysis Test Results

Variable	Say. (2-tailed)	Pearson Correlation	Information
X	0,033	0,352	Medium
AND	0,033	0,352	Correlation

Based on the analysis results in table 8, the sig value = 0.033 < 0.05, so this shows that there is a correlation between teacher competence and student cognitive learning outcomes. The magnitude of the relationship between student cognitive learning outcomes and teacher competency is 0.352. This value means that the relationship between the two variables is moderately correlated. The correlation coefficient is positive (0.362), because it shows that the relationship between the two variables is in the same direction. This means that if the teacher competency variable increases (Y), student cognitive learning outcomes (X) will also increase.

4. Hypothesis test

This test is carried out to prove a hypothesis based on existing research. This test is with the t test.

Table 9 Hypothesis Testing Results

Variable	T count	Say.	Information
MAV (X)	2,210	0,033	Significant

Hypothesis:

Ho: Teacher competency has no effect on student cognitive learning outcomes.

Ha: Teacher Competence influences Student Cognitive Learning Outcomes.

This hypothesis testing is often also called the t test, where the basis for decision making in the t test is: a. If the calculated t value is greater than t table then there is an influence of teacher competence on students' cognitive learning outcomes. b. On the other hand, if the calculated t value is less than t table then there is no influence of teacher competence on students' cognitive learning outcomes.

The results of statistical testing with SPSS on Teacher Competency (X) obtained a calculated t value = 2.210 > 2.035= t table, and Sig. = 0.033 < 0.05 (5%), so Ho is rejected and Ha is accepted. This means that teacher competence has a significant effect on students' cognitive learning outcomes.

Discussion

This research discusses teacher competency. As is known, teacher competency can be interpreted as a description of what a teacher must do in carrying out his work, both in the form of activities, behavior and results that can be demonstrated in the teaching and learning process. So that teachers' cognitive skills and intelligence remain current, teachers must take part in various courses, seminars and work. The results of this research show that teacher competence has a significant influence on students' cognitive learning outcomes. This is based on the results

of statistical testing with SPSS on Teacher Competency, the calculated t value = $2.210 > 2.035 = t$ table, and $\text{Sig.} = 0.03 < 0.05$ (5%), so H_0 is rejected and H_a is accepted. This means that teacher competence has a significant effect on student positive learning outcomes.

These results are in accordance with research (Syaidah et al., 2018) which reveals that teacher competency has a significant influence on student learning outcomes at Rambipuji State High School. The F test results show $F_{\text{count}} = 194.392 > F_{\text{table}} = 4.043$ with a significance level of $0.000 < \alpha = 0.05$ with a simple regression equation $\hat{Y} = 28.333 + 0.674X$. The calculation result of the coefficient of determination (R^2) is 0.802, this shows that the percentage influence of teacher competence on economic learning outcomes at Rambipuji State High School is 80.2%, while the remaining 19.8% is influenced by other independent variables which were not examined in the research This.

The pedagogical competencies possessed by teachers at SD Rancamanyar 03 Bandung include the teacher's understanding of students, designing and implementing learning, evaluating learning outcomes, and developing students to actualize the various potentials they have. In the personality competency aspect, the Rancamanyar 03 Elementary School teacher in Bandung has a steady, stable, mature, wise and authoritative personality, is a role model for students and has noble character. Meanwhile, in the aspect of social competence, teachers at SD Rancamanyar 03 Bandung are able to communicate and communicate effectively with students, with the essential indicator: communicating effectively with students, teachers can understand students' desires and expectations. In terms of professional competence, Rancamanyar 03 Elementary School teachers master the broad and in-depth learning material that teachers must master, including mastery of school subject curriculum material and the scientific substance that covers the material, as well as mastery of scientific structure and methodology. Mastering scientific substance related to the field of study. This means that teachers must understand the teaching material in the school curriculum; understand the structure, concepts and scientific methods that underlie and are coherent with the teaching material; understand the relationship of concepts between related subjects; and apply scientific concepts in the teaching and learning process. Mastering scientific structures and methods has the implication that teachers must master research steps and critical studies to deepen knowledge/material in the field of study. The choice of relevant learning methods by teachers can make it easier for students to understand lessons (Firdaus, 2022). One model that is relevant to the independent curriculum is the PJBL model (Firdaus et al., 2023).

Conclusion

Referring to the results of the research and discussion above, it can be concluded that teacher competency at SD Rancamanyar 03 Bandung is good, namely in accordance with teacher competency indicators. From the results of descriptive statistical analysis, the researcher obtained the average value (*mean*) which is classified as good because teacher competence is very influential in the learning process. The cognitive learning outcomes of students in classes V and VI of SD Rancamanyar 03 Bandung are good, namely in accordance with the indicators of student cognitive learning outcomes. The results of the researcher's descriptive statistical analysis test obtained an average value that was classified as good because students' cognitive learning outcomes increased in the learning process. There is a positive and significant influence between teacher competence on student cognitive learning outcomes.

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