

The Influence of Teacher Competence and the Use of Animated Video Learning Media on Student Learning Outcomes at SD Negeri 8 Tondano

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ABSTRACT: This study aims to determine the effect of teacher competence and the use of animated video learning media on student learning outcomes at SD Negeri 8 Tondano. The background of this study is based on the importance of the role of competent teachers and the use of technology-based learning media in improving the quality of education, especially student learning outcomes. The method used is quantitative with an experimental design. The research sample consisted of 60 students divided into two groups, each consisting of 30 students as an experimental class and a control class. Data were collected through questionnaires, observations, documentation, and learning outcome tests, then analyzed using descriptive statistical tests, prerequisite tests (normality, linearity, homogeneity, multicollinearity), and hypothesis testing through simple and multiple linear regression with the help of SPSS. The results showed that teacher competence and animated video learning media individually had a significant effect on student learning outcomes, indicated by a significance value below 0.05 and a *t-value* greater than *t-table*. Teacher competence makes a greater contribution than learning media. However, simultaneously, the combined effect of both on learning outcomes shows a lower contribution than the individual effect. The conclusion of this study is that both teacher competence and animated video learning media play an important role in improving student learning outcomes, especially when viewed separately.

KEYWORDS: teacher competence, learning media, animated videos, student learning outcomes, SD Negeri 8 Tondano

INTRODUCTION

Education has a very important meaning for the life of every human being. The importance of education shows that no one on this earth can escape from the process of education. Because by following the education process, a person can develop their potential and skills obtained through various forms of learning activities, guidance, teaching and training. Likewise, according to Nurhuda (2022) Education is very important, because with education humans can know something they do not know yet and explore quality human resources. Pangkey and Merentek (2023) Quality education can also produce quality human resources. Quality humans will be the spearhead of a nation's progress. Therefore, developed countries in the world make education one of the strategic factors in creating education as one of the strategic factors in creating the progress of their nation.

In accordance with law number. 20 of 2003 general education or national education is education based on the framework and constitution of the Republic of Indonesia in 1945, namely based on religious values and Indonesian language culture and meeting the requirements of changing times. developing student competencies to become human beings who believe and fear God Almighty, have noble character, are healthy, disciplined, capable, creative, independent and democratic and responsible citizens. Schools are one of the existing forums to achieve national education goals.

School is an educational institution in which there is interaction between teachers and students that includes educational activities in the form of learning to educate the nation's life. Most countries in the world have a formal education system that is generally mandatory. In this system, students' progress through a series of teaching and learning activities in schools. In the world of education, teachers are one of the determinants of the success of achieving the national goals of the Indonesian nation. Teachers are also an important component that is very important for the implementation of the education process. Therefore, "Teachers must have adequate quality and skills, because teachers are part of a very strategic micro education and have an important role in the education process in schools (Suyono and Hisyam, 2000)

Along with the development of the current era where technology is increasingly sophisticated and focuses on science and technology, the education system is transformed to prepare the younger generation to become lifelong learners but cannot be

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separated from the goals of national education which basically aim to improve the quality of all Indonesian people who are advanced, modern and based on Pancasila. Therefore, inclusive quality education and digital learning must be the focus in every country. In today's world of education, technology is very helpful in making learning activities a success, namely as a support for facilities and learning.

In this 21st century, learning is designed to help the 21st century generation keep up with the latest technological developments. Therefore, students are required to be able to know three learning skills (4C), namely, *creativity and innovation, critical thinking and problem solving, communication and collaboration* (Sukmawati and Santosa, 2022). These three competencies aim to shape the personality of students to be smarter and more qualified. To be able to shape students according to the goals of education in the current era, qualified educators are also needed who have skills, who can adapt to current developments, where teachers are required to be able to know and use technology. Teachers as implementers of education must have adequate competence to develop students' ways of thinking.

In the Government Regulation of the Republic of Indonesia in 2005 concerning national education standards, article 28 paragraph 3-point a, "Teacher Competence is the competence to manage student learning which includes: understanding students, planning learning, assessing learning outcomes and developing students to realize their multifaceted potential. Competence is very important for a teacher, especially in understanding the characteristics of students and managing learning (planning, implementing, and evaluating learning outcomes) and developing all potentials in students optimally. Competence is very much needed by teachers because teachers deal directly with students and teachers are required not only to teach but also as a means of character formation for students. Moreover, as a teacher who teaches in elementary schools who plays an important role in developing the personality and potential of students as a basis for continuing to a higher level of education.

Mulyasa (2017) stated that competence consists of student understanding, design, and implementation of effective learning, and continuous evaluation of learning. Pratama Satria and Rita (2021) also added that competence is an aspect of a person's competence which includes knowledge, skills, attitudes, values, and personal characteristics that enable employees to successfully carry out tasks and achieve results. It can be concluded that teacher competence is an important element that must be possessed by a teacher in carrying out their duties and responsibilities as an educator. Because by having and mastering this competence, it can illustrate the success of a teacher in carrying out the learning process, providing knowledge to their students. Yuniarto Starto et al. (2022) also explained that competence is working for anyone which includes knowledge, skills, and attitudes to work according to predetermined standards. The better the competence possessed by the teacher, theoretically the learning activities will be more effective so that the predetermined learning objectives can be achieved with all good.

In the educational process in schools, teaching and learning activities are the main activities. The success or failure of teaching and learning activities to achieve a competency that is determined to be achieved by students depends on the way the material is presented by the teacher (Goni, 2023). Because one of the functions of the learning objectives themselves is so that students better understand something that has not been understood before. The reality in the field now is that teachers still use the old way of teaching, using only conventional methods, only lecturing and explaining without using learning media that attracts students' attention, as a result students are bored of learning and student learning outcomes in the cognitive domain are lacking because students do not understand the material given by the teacher. Many teachers are also lazy to innovate by not developing skills to learn and master and use technology (Goni et al, 2022).

In fact, mastering technology is a demand of this era. Mangangantung, et al. (2022) to achieve student learning outcomes, teachers should present learning materials using technology-based learning media, where the presentation of the material is in the form of images or animated videos, so that learning activities can take place well and enjoyably and students can better understand the material presented by the teacher. Therefore, teachers must have pedagogical competence to manage learning using technology-based learning media such as animated videos.

METHOD

This study uses a quantitative method with an experimental design. Researchers use certain samples randomly for data collection using quantitative descriptive data analysis research with the aim of testing the established hypothesis (Sugiyono, 2009). This study was conducted at SD Negeri 8 Tondano with a sample of 60 students divided into 2 groups, namely: 30 students as an experimental class and 30 students in the control class, Sugiyono (2013) population refers to a generalization area consisting of objects or subjects. Data collection techniques include: documentation, observation, and questionnaires. Data analysis techniques used are descriptive statistical analysis, prerequisite tests (normality test, linearity test, homogeneity test, and multicollinearity test), and hypothesis testing (simple linear regression analysis and multiple linear regression analysis). The research instruments are in the

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form of teacher competency questionnaire variables (X1) and animated video learning media (X2) which are tested for validity and reliability, as well as student learning outcome tests (Y). The analysis of this study uses the SPSS 27 for Windows application.

RESULTS AND DISCUSSION

Based on the research results and findings obtained when the researcher was in the field, the following researcher presents the results of the data that has been analyzed using the SPSS application.

Table 1. Results of Descriptive Test of Variables

Statistics					
Learning media (X1)		Teacher competence (X2)		Learning outcomes (Y)	
N	30	N	30	N	30
Mean	84.93	Mean	88.87	Mean	88.87
Median	85.50	Median	91.00	Median	88.50
Std. Deviation	4.102	Std. Deviation	5,885	Std. Deviation	5,588
Minimum	75	Minimum	75	Minimum	77
Maximum	91	Maximum	97	Maximum	98
Sum	2548	Sum	2661	Sum	2666

Based on the results of descriptive analysis of three variables, namely: learning media (X1), teacher competence (X2), and learning outcomes (Y), the results obtained show a positive and consistent data tendency. The average value for the learning media variable is 84.93 with a median of 85.50, and a standard deviation of 4.102. This shows that most respondents gave a fairly high assessment of the learning media used, and the spread of data is relatively low, so it can be concluded that the perception of learning media is homogeneous and stable. The minimum value of 75 and the maximum of 91 indicate that there are extreme values that deviate significantly from the general trend. Meanwhile, teacher competence has an average value of 88.78 with a median of 91.00 and a standard deviation of 5.885. The median value is higher than the average value indicates that most respondents gave a higher assessment of teacher competence, and this reflects a very positive perception of teacher ability and professionalism. There is a slightly larger variation compared to learning media, swimming scores from 75 to 97 are still considered reasonable and support the conclusion that teacher competence is generally considered very good.

The learning outcome variable (Y) has an average value of 88.87 with a median of 88.50 and a standard deviation of 5.588. The similarity between the average and the media indicates that the learning outcome data has a symmetrical distribution and tends to be normal. This strengthens the researcher's assumption that there is no significant deviation in the perception or assessment results of student learning outcomes. The minimum value of 77 and the maximum of 98 illustrates high and even learning outcomes among the students studied. Overall, the descriptive results show that the three variables have a good data tendency, normal distribution, and non-extreme value distribution. This shows that the data can be considered descriptively valid because there are no significant anomalies or deviations in the respondents' perceptions. In addition, the relatively small standard deviation value in the three variables also reflects data consistency, which is one indicator that the instrument used in data collection can be said to be reliable. Thus, the results of the descriptive analysis can be concluded that the learning media and teacher competence are in the high category and contribute positively to student learning outcomes.

Normality Test

Table 1. Normality Test Results

One-Sample Komogorov-Smirnov Test				
	Competence Teacher	Animated Video Learning Media	Learning outcomes	Conclusion
N	30	30	30	Normal
Test Statistics	0.122	0.106	0.135	Normal
Asmp. Sig. (2-tailed)	0.200	0.200	0.170	Normal

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Based on the results of the normality test using the *One-Sample Kolmogorov-Smirnov Test* on variables (X1), (X2), and (Y), it is known that the three variables have the same number of samples of 30 data. The test results show a significance value (Asymp. Sig. 2-tailed), as well as 0.200 for the teacher competency and animation learning media variables, and 0.170 for the learning outcome variable. All these significance values are greater than the significant limit used, which is 0.05. This indicates that the three variables have a normal data distribution. In addition, the test statistic value *obtained* is quite low, namely 0.122 for teacher competency, 0.106 for animation video learning media, and 0.135 for learning outcomes. These values further strengthen the conclusion that there is no significant deviation from the normal distribution in the three variables. It can be concluded that the data used in this study meets the assumption of normality which is an important requirement in parametric statistical analysis. The normality of the data distribution works well in capturing the characteristics of the respondents fairly. Therefore, the entire data of this study can be stated as feasible to be used to test the relationship between variables or the influence of independent variables on dependent variables. The normality that is fulfilled also strengthens the validity of the analysis results and conclusions drawn in this study.

Linearity Test

Table 2. Linearity Test Results

Anova Table				Sig	Conclusion
Learning Outcomes (Y)	Teacher Competence (X1)	Between Groups	Deviation from Linearity	0.968	Linear
Learning Outcomes (Y)	Animated Video Learning Media (X2)	Between Groups	Deviation From Linearity	0.366	Linear

Based on the results of the linearity test presented in the table above, it is known that the relationship between variables (X1), (X2), and (Y) shows a linear relationship pattern. This can be seen from the significance value for *deviation from linearity* of 0.968 in the relationship between (X1) and (Y), and 0.366 in the relationship between variables (X2) and (Y). Both significance values are far above 0.05 which is the general significance limit in research so that it can be concluded that there is no significant deviation from the linear line. In other words, the relationship between these variables tends to follow a straight-line pattern and does not show a curved or non-linear relationship pattern. This condition indicates that the higher the teacher's competence or the better the quality of the learning media used, the student learning outcomes tend to increase proportionally. This linear relationship is very important in quantitative research, especially as a prerequisite in linear regression tests. If the relationship between variables is proven to be linear, then the regression model built based on the data will be more accurate and representative in describing the cause-and-effect relationship between variables. Therefore, based on the results of this linearity test, it can be concluded that teacher competence and animated video learning media have a significant linear relationship with student learning outcomes.

Homogeneity Test

Table 3. Homogeneity Test Results

Test Results		
Box's M		21,642
F	Aprox	10,780
	Df1	2
	Df2	263169.000
	Sig.	0.080

The test results shown through the Box's M test provide a significance value of 0.080. The value is greater than the significance limit of 0.05. This means that there is no significant difference in the variance between the tested data groups. In this context, the assumption of homogeneity of variance or equality of variance can be stated as fulfilled. The *F Approx value* of 10,780 with a degree (df1) of 2 and df2 of 263169 indicates that there is a high statistical value, the significance remains [indicating that there is no violation of the homogeneity assumption. Descriptively, these results indicate that the variables in the study have a relatively uniform data distribution across the groups being compared. This uniformity or homogeneity is an important requirement in further statistical analysis, especially when researchers want to use analysis (ANOVA) or linear regression tests. Homogeneity of

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variance ensures that the results of the analysis are not biased due to differences in data distribution in this study, which is worthy of further analysis using parametric statistical techniques because it has met the basic assumption of homogeneity.

Multicollinearity Test

Table 5. Multicollinearity Test Results

Model		Collinearity Statistics		Conclusion
		Tolerance	VIF	
1	Teacher Competence	0.793	1,261	There is no multicollinearity
2	Animated Video Learning Media	0.793	1,261	There is no multicollinearity

Based on the results of the multicollinearity test conducted on the independent variables, namely variables (X1) and (X2), a *tolerance value* of 0.793 and a *variance inflation factor (VIF) value* of 1.261 were obtained for each variable. The *tolerance value* approaching 1 and far above the minimum limit of 0.10 indicates that there is no high correlation between the independent variables in the regression model used. Meanwhile, the VIF value, which is below 10, even tends to be low, is a strong indicator that there are no symptoms of multicollinearity. These results provide an illustration that the two independent variables in the regression model do not significantly influence each other, so that each can stand alone in explaining its contribution to the dependent variable, namely learning outcomes (Y). The absence of multicollinearity in the regression model is very important because it ensures that the resulting regression coefficient is not biased and the interpretation of the influence of each variable becomes more valid. Thus, it can be concluded that the regression model in this study has met the assumption of multicollinearity and is worthy of further analysis to determine how much teacher competence and learning media affect student learning outcomes.

Hypothesis Testing

Table 6. Simple Regression Test Results

ANOVA								
Variable		A	B	R	r	Sig. F Charge	count	table
1	X1-Y	47,511	0.465	0.486	0.237	0.000	3.378	2.04841
2	X2-Y	-1.976	0.220	0.609	0.371	0.001	16,491	2.04841
3	X1X22-Y	1.262	0.077	0.254	0.020	0.	16,491	2.04841

The results of a simple regression test conducted to see the relationship between each independent variable and learning outcomes showed significant findings. In the relationship between (X1) and (Y), the correlation coefficient (r) value of 0.486 was obtained, indicating a moderate relationship between the two variables, while the determination coefficient (R²) value of 0.237 indicated that around 23.7% of the variation in learning outcomes could be explained by learning media. The F significance value of 0.000 and the t-count value of 3.378, which is greater than t_{table} 2.04841, indicate that the influence of learning media on learning outcomes is statistically significant. Meanwhile, the regression results between variables (X2) and (Y) showed a regression coefficient value of 0.220 with a constant of -1.976. The constant is negative, a positive regression coefficient indicates a positive influence between teacher competence and learning outcomes. The correlation coefficient of 0.609 indicates a strong relationship, while the R² value of 0.371 means that teacher competence is able to explain 37.1% of the variation in learning outcomes. The significance value of 0.001 and the tcount value of 16.491 which far exceeds the t_{table} value indicate that the influence of teacher competence on learning outcomes is also very significant.

Overall, the results of simple regression indicate that both learning media and teacher competence individually have a significant influence on student learning outcomes. However, when combined in one model, the influence of both simultaneously provides a significant increase in the explanation of the dependent variable, indicating that each variable has a stronger influence when viewed separately.

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CONCLUSION

Based on the results of the statistical analysis that has been carried out, it can be concluded that animated video learning media and teacher competence both have a significant effect on student learning outcomes. The results of the descriptive test show that the three variables have a normal, homogeneous data distribution and a linear relationship, so that they meet the requirements for regression analysis. The results of the simple regression test show that learning media has a moderate positive relationship with learning outcomes, while teacher competence has a stronger and more significant relationship with student learning outcomes. This is reinforced by the very low significance value and the t-count value which is greater than the t-table, which indicates that the influence of the two independent variables is statistically significant. However, when tested simultaneously in a multiple regression model, the combined effect of learning media and teacher competence on student learning outcomes shows a low contribution, as indicated by the small R2 value. Thus, it can be concluded that both learning media and teacher competence play an important role in improving student learning outcomes, especially when viewed individually.

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