



The Influence of teacher pedagogical competence and learning facilities on student learning outcomes at Tondano Adventist middle school

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Abstract

This research aims to determine the influence of teacher pedagogical competence and learning facilities on student learning outcomes at Tondano Adventist Middle School. This research method is a survey method with a sample of 81 students. The techniques used in data collection are questionnaire techniques and documentation. The research results were analyzed using multiple regression analysis methods. The results of this research show: (1) teacher pedagogical competence has a positive and significant effect on student learning outcomes at Tondano Adventist Middle School. The results of simple regression analysis calculations show that the $t_{\text{count}} > t_{\text{table}}$ value, namely $t_{\text{count}} 6.615 > t_{\text{table}} 1.990$. This means that there is a significant influence of teacher pedagogical competence on learning outcomes. (2) Learning facilities have a positive and significant effect on student learning outcomes at Tondano Adventist Middle School. The results of simple regression analysis calculations show that the $t_{\text{count}} > t_{\text{table}}$ value, namely $t_{\text{count}} 5.955 > t_{\text{table}} 1.990$. This means that there is a significant influence of learning facilities on learning outcomes. (3) Teacher pedagogical competence and learning facilities on student learning outcomes at Tondano Adventist Middle School with F test results showing that $F_{\text{count}} > F_{\text{table}}$, namely $38.016 > 3.11$. This means that there is a significant influence of teacher pedagogical competence and learning facilities on learning outcomes. The results of the multiple correlation analysis obtained a correlation value of 0.703, meaning that teacher pedagogical competence and learning facilities on learning outcomes have a relationship in the strong category. Based on analysis of the coefficient of determination, an R Square value of 0.494 was obtained, meaning that the influence of teacher pedagogical competence and learning facilities together on learning outcomes was 48.1%, the remaining 51.9% was influenced by other factors not discussed in this research.

Keywords: Teacher pedagogical competence, learning facilities, learning outcomes

Introduction

Education has an important role in creating a quality generation, which has intellectual intelligence, skills in doing work, has good social and emotional attitudes and above all has a character that is moral and devoted to God Almighty. As an educator, of course you have a responsibility to provide quality education for students.

In Tondano City there is a private school managed by the Adventist Education Foundation, namely Tondano Adventist Middle School. This school is located in the center of Tondano city and students come from different backgrounds. This school is a school managed by the Church, but those who attend this school are not only Adventists but also from various other Christian denominations.

The implementation of learning activities takes place in accordance with the educational calendar, where in the middle of each semester the school carries out an assessment for all students, namely Mid-Semester Summative and at the end of the semester, as usual, there is an end-of-semester assessment known as Final Semester Summative. In the last few years, student learning results reported to parents are not pure student achievement scores through exams, but most are remedial results because student achievement does not reach the minimum completeness criteria. This is a problem that needs attention to what is the cause. It is a temporary suspicion that teacher pedagogical competence and learning facilities may have an influence on student learning outcomes.

The learning activities carried out are of course to achieve each learning objective. Teachers can design learning that is meaningful and fun so that it can provide clear direction for students to understand the context of the material being taught and students are able to apply it in everyday life. The teacher's ability to manage the class using various methods and approaches to guide students is a very important factor that can influence student learning outcomes. Teachers certainly need to develop so they can innovate to improve the quality of learning in the classroom to achieve each learning goal.

In carrying out educational activities, of course the main need is also learning facilities, namely the facilities and infrastructure in the school. At Adventist Middle School, the quality of infrastructure still requires improvement. Moreover, there is a need for infrastructure to support the teaching and learning process so that it runs smoothly and can bring better quality learning. This research aims to determine the influence of teacher pedagogical competence and learning facilities on student learning outcomes at Tondano Adventist Middle School.

Method

This type of research is a type of quantitative research. The research method used in this research is the survey research method. The population in this study were all Tondano Adventist Middle School students in 2022/2023. From the existing population, 30 respondents were taken for instrument testing. So the population used for research was

101 respondents. The sample studied was 81 students. The data collection techniques used are questionnaires, observation, documentary. The research instrument used in this research is a questionnaire. The research instrument was tested for validity and reliability. The data analysis techniques used are analysis requirements tests and inferential statistical tests. Test analysis requirements, namely normality test and linearity test. Inferential statistical tests are multiple regression tests and hypothesis tests. Hypothesis tests are t test, multiple correlation test (R), and F test.

Results and Discussion

According to Sudjana (2004:12) "Validity is the accuracy of a tool in assessing what it assesses". Meanwhile, according to Arikunto (2002:146) "Validity is a measure that shows the levels of validity or authenticity of an instrument." To test the validity of this instrument, the Product Moment Correlation technique is used. The validity test of the instrument (questionnaire) is intended to find out whether the instrument used can reveal data from the variables studied accurately. Based on the indicators from the teacher pedagogical competency media variable, which totaled 23 questions, the results showed that there were 23 valid questions. Based on the indicators of the learning facility media variable, which totaled 23 questions, the results showed that there were 23 valid questions.

Reliability testing refers to an understanding that an instrument is trustworthy enough to be used as a data collection tool because the instrument is good (Arikunto, 2006: 178). To test the reliability of the instrument, the Alpha Cronbach formula is used. The reliability coefficient of teacher pedagogical competence is 0.543, because $0.543 > 0.05$. This means that the reliability of the teacher's pedagogical competence is reliable. The reliability coefficient of learning facilities is 0.544, because $0.544 > 0.05$. This means that the reliability of learning facilities is reliable.

The normality test is used to determine whether the residual values (existing differences) under study are normally distributed or not. The technique used is the Kolmogrov-Sumirnov technique with the help of the SPSS 20 application. The rule used to test normality is the significant score, which is in the results of the Kolmogrov-Surminov calculation. Based on the test results shown in the table. Shows the Asymp value. The sig for the teacher pedagogical competency variable is $0.552 > 0.05$ so that the population is normally distributed. The learning facilities variable shows the Asymp value. Sig or $0.579 > 0.05$ so that the population is normally distributed. Meanwhile, the learning outcome variable shows the Asymp value. Sig or $0.120 > 0.05$ so that the population is normally distributed.

The linearity test is a test to see whether there is a significant linear relationship between the variables being studied. The rule used is if the significant value of linearity is > 0.05 then the data has a linear pattern, otherwise the data does not have a linear pattern. From the output it can be seen that the sig value is > 0.05 or the significant value of variable X1 is $0.519 > 0.05$ and the significant value of variable X2 is $0.531 > 0.05$. So it can be concluded that the independent and dependent variables have a linear relationship.

The analytical method used in this research is the multiple linear regression analysis method which aims to test the

hypothesis whether or not there is an influence of teacher pedagogical competence and learning facilities on student learning outcomes at Tondano Adventist Middle School. The multiple linear regression analysis test in this study used the SPSS 20 program. With teacher pedagogical competence (X1) and learning facilities (X2) as independent variables and learning outcomes (Y) as the dependent variable. From the output for the regression equations X1 and X2 against Y, namely $\hat{Y} = 33.529 + 0.159$ It can be concluded that there is an influence of teacher pedagogical competence and learning facilities on student learning outcomes.

The t-test is used to determine the influence of the independent variables (teacher pedagogical competence and learning facilities) partially on the dependent variable (student learning outcomes). The t-test was carried out by comparing t_{count} with t_{table} at a significance level of 0.05. The test criteria are as follows: if $(Sig) < 0.05$ or $t_{count} > t_{table}$ then there is an influence. Conversely, if $(Sig) > 0.05$ or $t_{count} < t_{table}$ then there is no influence. It is known that the Sig value. for the influence of X1 on Y is $0.000 < 0.05$ and $t_{count} 6.615 > t_{table} 1.990$. So it can be concluded that H1 is accepted, which means there is an influence of X1 on Y. It is known that the Sig value. for the influence of X2 on Y is $0.000 < 0.05$ and $t_{count} 5.955 > t_{table} 1.990$. So it can be concluded that H2 is accepted, which means there is an influence of X2 on Y.

The f test is used to determine the influence of the Independent Variables (teacher pedagogical competence and learning facilities) together on the dependent variable (student learning outcomes). To determine the simultaneous influence of the Independent Variable on the Dependent Variable, it can be done in the manner below. The test criteria are as follows: if $(Sig) < 0.05$ or $F_{count} > F_{table}$ then there is an influence. Conversely, if $(Sig) > 0.05$ or $F_{count} < F_{table}$ then there is no influence. F_{count} has a value of $38.016 > F_{table} = 3.11$ with a significance of $0.000 < 0.05$. It can be concluded that the independent variables, teacher pedagogical competence (X1) and learning facilities (X2) simultaneously have a positive and significant effect on the dependent variable, student learning outcomes (Y). Based on the results found, H_a is accepted and H_0 is rejected, and the statement H_0 is that together (simultaneously) the teacher's pedagogical competence and learning facilities affect student learning outcomes at Tondano Adventist Middle School. The R value is 0.703, which means there is a strong relationship between teacher pedagogical competence and learning facilities on student learning outcomes. The coefficient of determination (R^2) is 0.481 or 48.1%, which means that 48.1% of the learning outcome variables can be explained by the variables of teacher pedagogical competence and learning facilities while the remaining 51.9% is explained by other factors not studied in this research.

1. The Influence of Teacher Pedagogical Competence on Student Learning Outcomes at Tondano Adventist Middle School

This research was conducted to obtain data on teacher pedagogical competency variables through a questionnaire instrument given to respondents. The research data that has been collected is then tabulated using the Microsoft Excel program. Then the researcher analyzed the respondents' answers taken from the questionnaire using index analysis.

Ferdinand (2014:277) explains that the index analysis technique aims to describe respondents' perceptions of the statement items proposed in the research.

Based on the research results of the first hypothesis (H1), pedagogical competence with research results $t_{\text{count}} 6.615 > t_{\text{table}} 1.990$ with a significance value of $0.000 < 0.05$, this means that the pedagogical competence variable (X1) cannot be ignored. The correlation value lies between 0.60-0.799, this shows that there is a strong relationship between teacher pedagogical competence and student learning outcomes. Teacher pedagogical competence and student learning outcomes have a positive correlation. A positive correlation coefficient indicates a positive relationship between teacher pedagogical competence and student learning outcomes. The better the competencies possessed and mastered by the teacher, the better the student learning outcomes will be. This also applies vice versa, if the teacher's pedagogical competence is lacking it will have an impact on decreasing student learning outcomes.

This is in accordance with the opinion of Susanto (2019: 108) who states that the expertise and authority of teachers greatly influences the learning process of students in the classroom and outside the school environment. Mastery of the material taught, learning methods, and learning management skills are part of the pedagogical competencies that a teacher must have. Majid (2014:189) states that teachers must be able to develop all their potential, both in mastery of material and skills in creating a conducive learning atmosphere. A conducive learning atmosphere will make students understand the learning material or what the teacher is teaching.

These two theories strengthen the research results, namely that there is a significant influence of pedagogical competence on student learning outcomes, where teacher pedagogical competence is an external factor that influences student learning outcomes. The results of this research are strengthened by Nurjannah's (2018) research, students at Sunan Kalijaga State Islamic University stated that there was a positive influence between students' perceptions of the pedagogical competence of mathematics teachers on the learning achievement of class V students at MI Darul Huda. This shows that the research results are in line with research conducted by Jems Dainga (2022) that there is a positive influence of each teacher's competence, learning facilities, learning motivation on student learning outcomes in economics subjects. Apart from that, the joint positive influence of teacher competence, learning facilities, learning motivation on student learning outcomes in economics subjects at SMA Negeri 1 Tabukan Tengah.

2. The Influence of Learning Facilities on Student Learning Outcomes at Tondano Adventist Middle School

Based on the results of the second research hypothesis (H2), learning facilities with research results $t_{\text{count}} 5.955 > t_{\text{table}} 1.990$ with a significance value of $0.000 < 0.05$. This means that the learning facility variable (X2) cannot be ignored. Thus, the hypothesis states that there is a significant influence of learning facilities on student learning outcomes at Tondano Adventist Middle School. A positive correlation coefficient indicates a positive relationship between learning facilities and learning outcomes. The results of this research are relevant to research conducted by Prihatin (2017), students at Yogyakarta State University stated that there was

a positive influence between learning facilities on the learning outcomes of economics subjects for class X IIS students at SMA Negeri 1 Seyegan in the 2016/2017 academic year. This proves that the more complete and available learning facilities are in schools, the more influence it will have on improving student learning outcomes. On the other hand, if there is a lack of availability of learning facilities at school, it will have an impact on reducing student learning outcomes. One way to improve student learning outcomes is by providing adequate learning facilities for students.

This shows that the research results are in line with research conducted by Zaveren Hanna Gloria Rorong (2021) that by implementing the STAD type cooperative learning model can improve student learning outcomes from application in the first cycle to application in the second cycle. Thus, it can be concluded that the STAD type cooperative learning model can improve simulation and digital communication learning outcomes. Aunurrahman (2016:196) states that the availability of learning facilities in schools will have an impact on creating a conducive learning atmosphere and make it easier for students to obtain information during the learning process. Thus, learning facilities are needed to improve student learning outcomes in schools.

3. The Influence of Teacher Pedagogical Competence and Learning Facilities on Student Learning Outcomes at Tondano Adventist Middle School

Based on the research results of the Third Hypothesis (H3), teacher pedagogical competence and learning facilities with research results $F_{\text{count}} 38.016 > F_{\text{table}} 3.11$ with a significance value of $0.000 < 0.05$, this means that the variables pedagogical competence (X1) and learning facilities (X2) cannot be ignored. Thus, the hypothesis states that there is a significant influence of teacher pedagogical competence and learning facilities on student learning outcomes at Tondano Adventist Middle School.

This shows that the research results are in line with research conducted by Jems Dainga (2022) that there is a positive influence of each teacher's competence, learning facilities, learning motivation on student learning outcomes in economics subjects. Apart from that, the joint positive influence of teacher competence, learning facilities, learning motivation on student learning outcomes in economics subjects at SMA Negeri 1 Tabukan Tengah. Apart from that, this is also in line with research conducted by Zaveren Hanna Gloria Rorong (2021) that by implementing the STAD type cooperative learning model can improve student learning outcomes from application in the first cycle to application in the second cycle. Thus, it can be concluded that the STAD type cooperative learning model can improve simulation and digital communication learning outcomes.

Conclusion

1. Teacher pedagogical competence has a significant effect on the learning outcomes of Tondano Adventist Middle School students, as evidenced by the results of simple regression analysis calculations which show that the $t_{\text{count}} > t_{\text{table}}$ value, namely $t_{\text{count}} 6.615 > t_{\text{table}} 1.990$ so that H1 is accepted. This means that there is a significant influence of teacher pedagogical competence on learning outcomes. The direction of the relationship between the variables of teacher pedagogical competence and learning outcomes is

positive, because r_{count} is positive. The contribution of the influence of teacher pedagogical competence to student learning outcomes is 40.8%, the remaining 59.2% is influenced by other factors not discussed in this research.

2. Learning facilities have a significant effect on student learning outcomes at Tondano Adventist Middle School, as evidenced by the results of simple regression analysis calculations which show that the $t_{\text{count}} > t_{\text{table}}$ value, namely $t_{\text{count}} 5.955 > t_{\text{table}} 1.990$ so that H2 is accepted. This means that there is a significant influence of learning facilities on learning outcomes. The direction of the relationship between the learning facility variables and learning outcomes is positive, because r_{count} is positive. The contribution of the influence of learning facilities on learning outcomes is 46.5%, the remaining 53.5% is influenced by other factors not discussed in this research.
3. Teacher pedagogical competence and learning facilities have a significant effect on student learning outcomes at Tondano Adventist Middle School as evidenced by the results of the F test which shows that $F_{\text{count}} > F_{\text{table}}$, namely $38.016 > 3.11$, so H3 is accepted. This means that there is a significant influence of teacher pedagogical competence and learning facilities on learning outcomes. Based on the results of the multiple correlation analysis, a correlation value of 0.703 was obtained, meaning that teacher pedagogical competence and learning facilities on learning outcomes have a strong relationship, because the r_{count} of 0.703 is in the range 0.60-0.799. Based on analysis of the coefficient of determination, an R Square value of 0.494 was obtained, meaning that the contribution of the influence of teacher pedagogical competence and learning facilities together on learning outcomes was 48.1%, the remaining 51.9% was influenced by other factors not discussed in this research.

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