

Conference Paper

The Effect of Teacher Competency and Teaching Commitment to Student Learning Results Machining Engineering Skills Program

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Abstract

This research is intended to find; (1) the influence of teachers on student learning outcomes; (2) the influence of commitment to student learning outcomes; And (3) the influence of teachers and commitment to student learning outcomes. The research population is all students of machining technique of Vocational High School 34 Jakarta and productive teacher, the sample is the 10th grade students of machining technique as many as 31 students and productive teachers as many as 12 people. The method in this research is survey method with associative approach. The study used secondary data technique with questionnaire; And primary data of learning result of even semester. Data analysis technique used is simple regression, multiple regression, and F test with significance level 0,05. The results showed; (1) there is a positive influence of teacher competence on student learning result F test of $17,15 > F_{table} 3,32$ equal to 13,8%; (2) there is no positive effect on student learning outcomes test result $F_{count} 1,44 > F_{table} 3,32$ of 1.6%; (3) there is a positive influence of teacher competence and learning commitment of student learning result of $F_{count} 5,65 > F_{table} 3,32$, 31,02%.

Keywords: teacher competence, teaching commitment, student learning outcomes.

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Received: 11 January 2019

Accepted: 14 February 2019

Published: 25 March 2019

Publishing services provided by
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Selection and Peer-review under the responsibility of the 3rd ICTVET 2018 Conference Committee.

1. Introduction

”There are at least three main conditions that must be considered in the development of education in order to contribute to the improvement of the quality of Human Resources (HR), namely: 1) building facilities, 2) quality books, 3) teachers and professional education personnel” (E. Mulyasa, 2011: 3).

According to Sardiman (2014: 19), in the teaching and learning process, teachers as teachers and students as subjects of learning, required a certain qualification profile ‘in terms of knowledge, abilities, attitudes and nature of the nature of its properties, Effective and efficient.

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According to Theodore Coladarci, “the greater teaching commitment of the teachers who were higher in both general and personal efficacy; who is taught in schools with fewer students per teacher; and who worked under a principal of positive in the areas of instructional leadership, school advocacy, decision making, and relations with students and staff”[7].

This teaching commitment, by Kusman (Dahlan, 2008: 67) is called ”commitment to student learning” which reflects the dedication of teachers in helping students to learn. Based on the exposure it can be a reference, teaching commitment can affect student learning outcomes.

Departing from the background, the authors are interested to learn about the influence of teachers and commitment to the students’ learning outcomes of Machining Engineering Program. Objectives to be achieved from this research is information about: (1) Knowing the influence of teachers on student learning outcomes; (2) Knowing the influence of commitment to student learning outcomes; (3) Know the influence of teachers and commitment to student learning outcomes.

2. Methods

The research was conducted in April 2017-June 2017 at Grade 10 of Machining Technique and Productive Teacher at Vocational School of State 34 Jakarta Pusat which is located at Jalan Kramat Raya Number 93, Salemba, Senen, Central Jakarta. The method used in this research is associative method. The population in this research is all students of Machining Technique, while the sample under study used 31 students of 10th grade of Machining Technique and Productive Teacher as many as 12 people.

In this study, independent variables (X1 and X2) use secondary data technique with questionnaire. And for the dependent variable (Y) use the primary data of learning result of even semester. Data analysis technique used in this research is divided into two, namely prerequisite test using data of normality using Chi Square; And hypothesis test consisting of simple regression test, multiple regression, and F test.

3. Results

3.1. Data normality test

In table 1. The value of chi square, X^2 table = 12.6 for $\alpha = 0.05$ and $df = 6$. Because the

TABLE 1: The value of Chi Square

	Teachers Competency	Commitment Teaching	Student Learning Outcomes
Dk=n-1	6	5	6
Value X ² table	12,6	11,07	12,6
Value X ² count	11,97	4,94	4,13

X² count < X² table it can be concluded that the dissemination of data on all variables are normally distributed.

3.2. Data of teacher competence variable (X1)

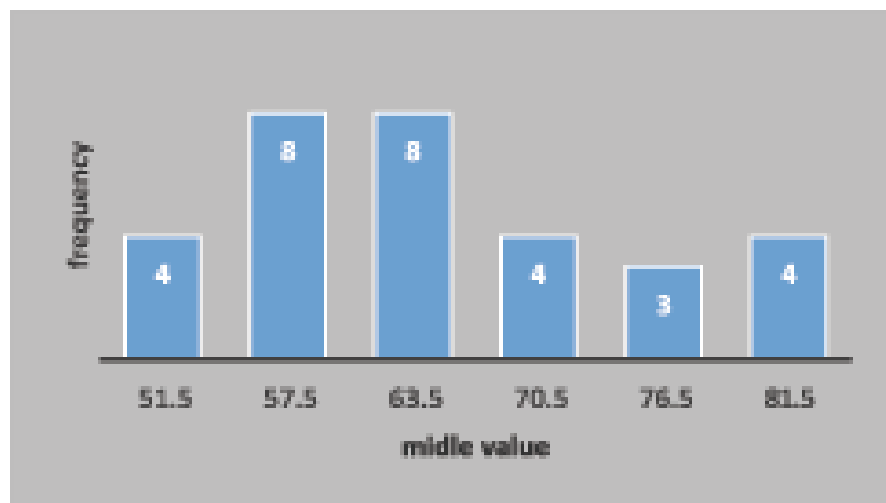


Figure 1: Histogram Variable Teacher Competence.

TABLE 2: Percentage Fulfillment Teacher Competence.

Variable	Indicator	Total questions	score ideal	Total	% fulfillment indicator	Total score	ideal score	% variable fulfillment
Teacher Competence	Pedagogical Competence	7	868	468	53,91	1368	2976	45,96
	Personality Competence	8	992	522	52,62			
	Social Competence	4	496	70	14,11			
	Professional Competence	5	620	308	49,67			

3.3. Data of teaching commitment variable (X2)

TABLE 3: Average Score Calculate variable indicator X1 Teacher Competence.

Variable	Indicator	Number Problem	amount Item Problem	Average Score	Total average	Score %
Teacher Competence	Pedagogical Competence	7	468	66,86	211,2	31,65
	Personality Competence	8	522	65,25		30,89
	Social Competence	4	70	17,5		8,28
	Professional Competence	5	308	61,6		29,16

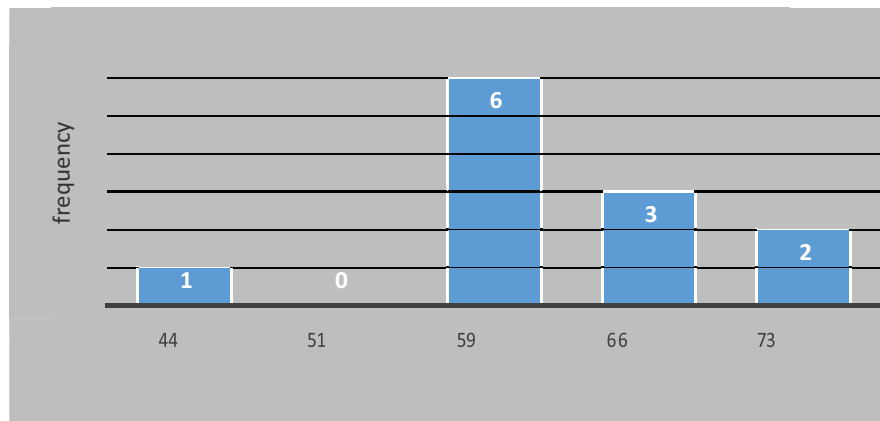


Figure 2: Histogram Variables Teaching Commitment.

TABLE 4: Percentage of the fulfillment of the Teaching Commitment.

variable	Indicator	Total Problem	Score Ideal	Total	Score % fulfillment indicator	total score	ideal score	Total % fulfillment variables
Teaching	profession	16	768	317	41.3	748	16	44.5
	humanity	16	768	358	46.6			
Commitment							80	
	Society	3	144	73	50.69			

TABLE 5: Average Score Calculate Variable Indicator X2 Teaching Commitment.

Variables	Indicators	Number Problem	Item Problem Number	Average Score	Number average	Score %
Teaching	profession	16	317	19.81	66.52	29.78
	humanity	16	358	22.37		33.63
Commitment						
	Society	3	73	24.33		36.58

3.4. Data of variable student learning outcomes (Y)

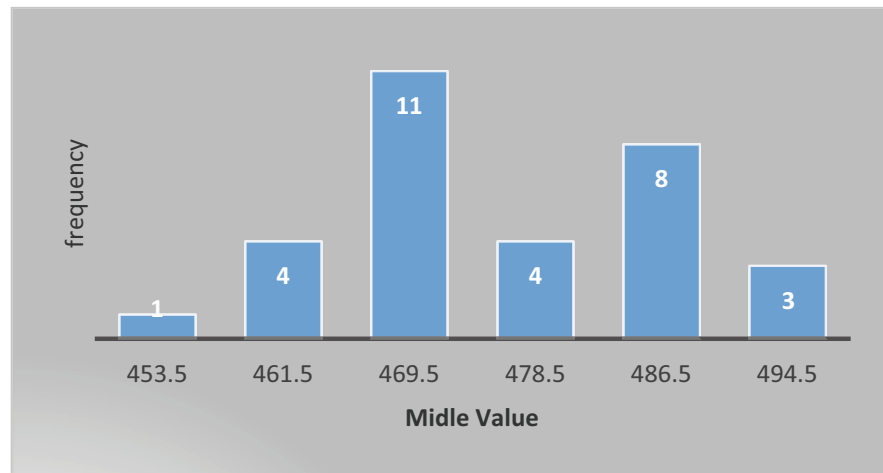


Figure 3: Histogram variable Student Learning Outcomes.

TABLE 6: Percentage of fulfillment variable Student Learning Outcomes.

Variable	Total Score	Score	Ideal fulfillment variable %
Student Learning Outcomes	14771	18600	79,41

TABLE 7: Average Score Calculate variable Y indicator Student Learning Outcomes.

variable	Indicators	\sum Students	Total Value	Average Value	Total Average	Value %
Student Learning Outcomes	Under the criteria (75)	0	0	0	2461,8	0
	Above the criteria (75)	31	14771	2461,8		100

4. Discussion

4.1. Analysis of effect teacher competence (X1) of the student learning outcomes (Y)

The research hypothesis is that there is a positive and significant influence of teacher competence on the result of the Machining engineering skills program.

Based on the calculation, the known value of the count $r = 0.372$ $df = 31 - 1 = 30$ for = 5% with $r_{table} = 0.361$. Because the count $r \geq r_{table}$, we conclude that H_1 is accepted. From the test results $F_{count} (17.15) \geq F_{table} (3.32)$, then there is a significant influence between the variables X 1 and variable Y. Can be concluded that the contribution of student achievement is determined by the competence of teachers was 13.8% and the rest 86.2% is determined by other variables.

Simple linear regression analysis to pair of research data between teacher competence of student learning achievement yield regression coefficient (b) equal to -0,49

and constant (a) 301,70. From the calculation, the regression equation used to predict student achievement based on the teacher's competence is $\hat{Y} = 301,70 - 0,49X$.

4.2. Analysis of effect teaching commitment (X2) of the student learning outcomes (Y)

The hypothesis of the research is that there is a positive and significant influence of students' learning environment on the students' learning outcomes of Machining Engineering Program.

Based on the calculation, the known value of the count $r = 0.127$ $df = 12 - 1 = 11$ for $\alpha = 5\%$ with $r_{table} = 0.602$. Because the count $r \leq r_{table}$, we conclude that H_0 is rejected. From the test results calculated $F(1,44) \geq F_{table}(3.98)$, then there is a significant difference between the variables X 2 and variable Y. It can be concluded that the contribution of student achievement determined by the commitment of 1.6% and The remaining 98.4% is determined by other variables.

Simple linear regression analysis to the pair of research data between the commitment of teaching on student learning result yield regression coefficient (b) equal to -0,26 and constant (a) 185,34. From the calculation, the regression equation used to predict student achievement based on students' learning environment is $\hat{Y} = 185,34 - 0,26 X$.

4.3. Analysis of effect teacher competence (X1) and teaching commitment (X2) of the student learning outcomes (Y)

The research hypothesis is that there is a positive influence of teacher competence and teaching commitment to the students' learning outcomes of Machining Engineering Program.

Based on the calculation, the known value of the count $r = 0.557$ $df = 31 - 1 = 30$ for $\alpha = 5\%$ with $r_{table} = 0.361$. Because the count $r \geq r_{table}$, we conclude that H_1 is

accepted. From the test results calculated $F(5,65) \geq F_{table}(3.32)$, then there is a significant influence between the variables X 1 and X 2 to variable Y. It can be concluded that the contribution of student learning outcomes determined by the competence and commitment of teachers to teach at 31.02% and the remaining 68.98% is determined by other variables.

Multiple regression analysis toward pair of research data between teacher competence and teaching commitment to student learning result yield regression coefficient (c) equal to -0,91 (b) equal to -0,40 and constant (a) 558,53. From the calculation, the

regression equation to predict the outcome will be used by student learning based on the competence of teachers and teaching commitment is $Y = 0.91X_1 - 0.40X_2 + 558.53$.

5. Conclusion

Based on the objectives and research results, it can be concluded that:

1. Based on the results of the management of statistical data correlation coefficient calculation teacher competence on student learning outcomes obtained r_{xy} at 0,363 and the 5% significance r table at 0.361. And the test results calculated $F(16.55) > F_{table}(3.32)$, then there is a significant influence between the variables of teacher competence and student learning outcomes variables. It shows a positive and significant effect of teacher competence in student learning outcomes light vehicle engineering expertise program. While based on the calculation of the coefficient of determination concluded that the contribution of student learning outcomes are determined by the competency of teachers by 13.21% and the remaining 86.78% is determined by other variables. To predict the results of student learning based on the competence of teachers is $Y = 607.91 - 0.96X$, large competence of teachers, the greater the learning outcomes of students.
2. Based on statistical data management commitment correlation coefficient calculation results of teaching the learning outcomes of students obtained r_{xy} of 0.377 and a 5% significance r table at 0.361. And the test results calculated $F(17.55) > F_{table}(3.32)$, then there is a significant influence between the variables of teaching commitments and variable student learning outcomes. I showed a positive and significant influence teaching commitment to student learning outcomes technical expertise machining program. While based on the calculation of the coefficient of determination concluded that the contribution of student learning outcomes determined by the commitment to teach at 14.21% and the remaining 85.78% is determined by other variables. To predict student learning outcomes based teaching commitment is $Y = 593.96 - 0.67X$, the greater the commitment to teaching the greater the learning outcomes of students.
3. Based on statistical data management correlation coefficient calculation result of teacher competence and commitment to teaching the learning outcomes of students obtained r_{xy} of 0.42 and a 5% significance r table at 0.361. And the test results calculated $F(10.33) > F_{table}(3.32)$, then there is a significant influence between the variables of teacher competence and commitment of teaching to

student learning outcomes variables. It shows positive and significant influence teaching commitment to student learning outcomes technical expertise machining program. While based on the calculation of the coefficient of determination concluded that the contribution of student learning outcomes are determined by the competence of teachers and teaching commitments amounted to 18.02% and the remaining 81.97% is determined by other variables. To predict the results of student learning based on the competence of teachers and teaching commitment is $Y = 0.52 X_1 + 615,73 - 0,41X_2$, the greater the competence of teachers (X_1) and a commitment to teaching (X_2) the greater student learning outcomes.

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