



Relationship Between Learning Motivation, Learning Discipline and Teaching Materials Against Student Competence TKR Department of Automotive Productive Training Through Readiness of Student Learning as an Intervening Variable

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Abstract

This Research aims to determine the learning effect of motivation, discipline, materials on student learning readiness; to find out learning of motivation, discipline, materials towards the competencies of automotive productive training eye students. The method used is description analysis with linear regression. This analysis is used to determine whether there is an learning effect of motivation, discipline and materials on the competencies of students in automotive productive training eyes with intervening learning readiness. The research subjects were class XI students of SMK Bhakti Praja Batang. Data collection is questionnaire. Descriptive data analysis, validity, normality and regression analysis. The results showed directly that there was a significant effect of learning motivation on student competency, direct significant influence of learning discipline on student competency, direct significant effect of teaching material on student competence, and directly there was a significant effect of motivation on learning readiness, directly there is no significant effect of motivation on learning readiness, direct significant effect of learning readiness on student competence. Indirect effect is mediated by the intervening variable of learning readiness. Independent variables do not affect students' competencies through intervening variables, so that intervening variables are not used as reinforcement between independent and dependent variables.

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INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual, religious, self-control, habits, intelligence, and skills needed for themselves, society, nation and state (Article 1 Law No. 20 of 2003). Good education is expected to increase as well as the value of the individual. And the purpose of education is to educate the nation's life and good education is needed to guarantee the life that will take place in the future. The purpose of this education alone can be achieved by learning. Rifai and Catharina (2011: 82) states: "learning plays an important role in the development, habits, attitudes, beliefs, goals, personality and even one's perception". Because learning is very important as a process of changing the process from the uninitiated to knowing, the process of change takes place gradually. Changes obtained depend on the learning process carried out by students.

Factors that influence learning can be classified into two groups, namely internal factors and external factors (Slameto, 210: 54). Learning activities are a learning process experienced by students, one of the most fundamental of which is student learning readiness. Dalyono (2009: 52) suggests "everyone who wants to carry out learning activities must have readiness that is with sufficient ability, both physical, mental and learning equipment". Learning readiness is the way students are ready to respond to the material provided by the teacher and learning readiness is important because a process requires careful preparation. Learning readiness can arise because of the factors of the students themselves and their environment. Factors originating from within the student itself are in the form of physical and psychological conditions of a student such as student motivation.

The fundamental problem faced by the current Vocational Technology is the lack of achievement of the ability of minimal competence to master the basic principles and manual skills for students. The causes of the lack of achievement of mastery of automotive productive training eye competencies are caused by productive learning that has not fulfilled the rules of teaching materials that should exist, such as the completeness of facilities, management of facilities, which are related to productive learning. Besides this, it is also a factor of learning readiness, lack of readiness of students in carrying out automotive productive education courses. Motivation and discipline of learning is a factor of students themselves from good motivation and discipline so students will be enthusiastic about following practical activities and vice versa with less motivation and discipline, students will not prepare themselves to follow the automotive productive training. Student learning discipline such as coming late, skipping while practicing, and not wearing uniforms of practice greatly influences student learning readiness which results in not achieving student competence. Also factors from outside the student are teaching material factors with good and complete teaching materials so students will be ready to take practical learning.

Related to these problems, it needs to be questioned "what are the learning motivation, learning discipline and teaching materials for student learning readiness in following the automotive productive training that can shape the competency skills of automotive productive training students to master the skills needed after they graduate. Students 'motivation and learning discipline as well as teaching materials will support students' readiness in accepting automotive productive training and this will affect the competency of automotive productive training optimally so as to improve the quality of graduates who are ready to work. The issue of the lack of competency of Indonesian workers so that they are unable to compete with foreign workers, it is suspected that the results of our education are less able to produce competent workforce needed by the global workforce. Automotive engineering vocational education must be able to print a workforce that has academic abilities (hard skills) and personal skills (self-skills) that can compete in the global workforce. Tight competition in the global workforce requires students to be able to compete that starts from

themselves from student learning readiness is expected to influence student competencies in the automotive productive training.

The aims of this study are: (1) to determine the effect, student learning motivation on student learning readiness; (2) to find out student learning discipline towards student learning readiness; (3) to find out teaching materials for student learning readiness; (4) to find out students' learning motivation towards the competencies of automotive productive training students; (5) to find out students' learning discipline towards the competencies of automotive productive training students; (6) to find out the available teaching materials on the competencies of automotive productive training students; (7) to determine student learning readiness towards the competencies of automotive productive training students.

METHODS

In this study using regression analysis is used to test and analyze whether there is influence or not between two or more variables. This analysis is used to determine whether there is an effect of learning motivation, learning discipline and teaching materials on the competencies of students in automotive productive training with intervening learning readiness. This regression analysis is related to the problem of the magnitude of the influence of each independent variable on the dependent variable. Effect of X1 (learning motivation), X2 (learning discipline) and X3 (teaching material) on learning readiness (Z).

$$Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \dots\dots\dots (1)$$

- Z = Student learning readiness
- α = constant
- β_1 = Learning motivation variable regression coefficient
- β_2 = Learning variable regression coefficient
- β_3 = teaching material variable regression coefficient
- e = Standard error

Effect of X1 (learning motivation), X2 (learning discipline), and X3 (teaching material) and Z (work readiness) on student competencies in the automotive productive training.

$$Y = \alpha + \beta_4 X_1 + \beta_5 X_2 + \beta_6 X_3 + \beta_7 Z + e \dots\dots\dots(2)$$

- Y = Competence of Students on Productive Automotive Training
- A = Constant
- β_1 = Learning motivation variable regression coefficient
- β_2 = Learning variable regression coefficient
- β_3 = teaching material variable regression coefficient
- β_4 = Learning readiness variable regression coefficient
- e = Error

The subjects of this study were students in class XI of SMK Bhakti Praja Batang. sampling technique using purposive sampling where sampling has been determined by researchers, namely the department of light vehicle engineering (automotive engineering). Whereas to determine the number of respondents in this study researchers used a simple random sampling technique. Data collection

methods used were questionnaires. Likert scale is used to measure motivation, discipline and teaching materials.

The description of this variable, will later be obtained a description of the tendency of the answers of all respondents to an indicator statement questionnaire. Test the questionnaire instrument using validity test, reliability test, classical assumption test, multicollinearity test, heteroscedasticity test, normality test, regression analysis (Path Analysis), test coefficient of determination, t test, F test, mediation effect test.

RESULT AND DISCUSSION

Table 1. Analysis Result Description

	Learning Motivation	Learning Dicipline	Material	Learning Readiness	Student Competen ce
Valid	89	89	89	89	89
Missing	0	0	0	0	0
Mean	42.2022	31.9888	38.2697	50.8539	52.2247
Std. Deviation	3.57447	2.39077	3.76516	4.23607	4.00781
Minimum	32.00	26.00	28.00	36.00	38.00
Maximum	50.00	38.00	46.00	61.00	61.00

Based on the results of the descriptive statistical test in table 1 it shows that in this study used as many as 89 respondents. The independent variable which is the independent variable in this study includes learning motivation variables, from the results of the questionnaire answers showed an average score of 42.202 with a standard deviation of 3.574 scores the highest number of 50 and the lowest score 32 of these results can be seen learning motivation of students / students of 42%.

The results of the questionnaire answers to the disciplinary learning variables can be known as the average score of 31.9888 with a standard deviation of 2.390, the highest score of 38 and the lowest 26. From these results it is known that students' learning discipline is 31.98% learning motivation variable, from the answers to the questionnaire showed an average score of 42,202 with a standard deviation of 3,574 scores the highest number of 50 and the lowest score 32 of these results can be seen learning motivation of students / students by 42%

The learning readiness variable which is an intervening variable that mediates the independent variable and dependent variable, from the results of the questionnaire answers shows the average score for learning readiness is 50.8539 with a standard deviation of 4.236 the highest number of scores 61 and the lowest score 36 of these results can be known learner / student readiness is 50.85%

The dependent variable of student competency, from the results of student practice values showed an average score of 52,224 with a standard deviation of 4,007 the highest number of scores 61 and the lowest score 38 of these results can be seen learning motivation of students / students was 52.22%. From the results of table 1 statistics, it can be seen that the percentage of answers to the

questionnaire for the independent variables of learning motivation has a large 42%, teaching materials 38% and learning discipline 31%. Intervening variables of learning readiness score an average score of 50.58% / while for the dependent variable of student competence is 52.22% .

Table 2. Path Model Coefficient 1

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.158	4.662		3.252	.002
	Learning Motivation	.309	.135	.261	2.295	.024
	Learning Dicipline	.000	.188	.000	-.002	.998
	Material	.592	.105	.527	5.644	.000

a. Dependent Variable: Learning Readiness

The results of the regression equation from the SPSS calculation for the model I path are as follows:

$$Z = 15.158 + 0.309 X1 + 0.000 X2 + 0.592X3 + e$$

Constants = 15.158, so if the variable of learning motivation, learning discipline and teaching material is 0, then the students' readiness in TKR majors in the automotive productive training eye of SMK Bhakti Praja Batang is 15.158. This means that if there is no learning motivation, learning discipline and teaching materials, the learning readiness of students majoring in TKR in the automotive productive education and training at SMK Bhakti Praja Batang will increase by 15,158. Learning Motivation Regression Coefficient = 0.309, so If the learning motivation variable increases by 1 point while the learning discipline variable and teaching material are constant, it will cause an increase in student readiness in TKR majors in automotive productive training at SMK Bhakti Praja Batang at 0.309. Learning Discipline Regression Coefficient 0.000, so If the learning discipline variable increases by 1 point while the learning motivation variable and teaching materials are constant, it will cause an increase in learning readiness of TKR students in the automotive productive training of SMK Bhakti Praja Batang of = 0,000. Teaching Material Regression Coefficient = 0.592, so the teaching material variable has increased by 1 point while the learning motivation variable and learning discipline are constant, it will cause an increase in learning readiness of TKR students in the automotive productive training at SMK Bhakti Praja Batang = 0.592.

Table 3. Line Summary Model I

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.706 ^a	.498	.480	3.05449

Predictors: (Constant), Material, Learning Discipline, Learning Motivation)

The amount of indigo R² or R Square found in table 4.4 Model Summary is equal to 0.498, indicating that the contribution or contribution of learning motivation, learning discipline and teaching materials to learning readiness is 49.8% while the remaining 50.2 %% are contributions from other variables not included in the study.

Constants = 1,422, so if the variables of learning motivation, learning discipline and teaching materials and learning readiness are 1,422, the learning readiness of TKR students in the automotive productive training at SMK Bhakti Praja Batang is 1,422. This means that if there is no learning motivation, learning discipline and teaching materials, the learning readiness of students majoring in TKR in the automotive productive training at SMK Bhakti Praja Batang will increase by 1,422. Learning Motivation Regression Coefficient = 0.022, so If the learning motivation variable increases by 1 point while the discipline learning variable, teaching material and learning readiness are

constant, it will cause an increase in student readiness in TKR majors in automotive productive training at 0.022. Learning Discipline Regression Coefficient 0.039, so if the learning discipline variable increases by 1 point while learning motivation variables, teaching materials and learning readiness are constant, it will cause an increase in learning readiness of TKR students in the automotive productive training eye of SMK 0.039.

Table 4. Path Model II Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.422	2.177		2.490	.015
	Learning Motivation	.022	.061	.020	.365	.716
	Learning Discipline	.039	.083	.023	.472	.638
	Material	.026	.054	.024	.477	.635
	Learning Readiness	.858	.048	.907	17.95	.000

5

a. Dependent Variable: Student Competence

Teaching Material Regression Coefficient = 0.026, so the teaching material variable has increased by 1 point while the learning motivation, learning discipline and learning readiness variables are constant, it will cause an increase in TKR students' learning readiness in the automotive productive training SMK Bhakti Praja Batang = 0.026. Learning Readiness Regression Coefficient = 0.858, so the variable teaching material has increased by 1 point while the learning motivation, learning discipline and teaching materials variables are constant, it will cause an increase in TKR students' readiness in the automotive productive education eye of SMK Bhakti Praja Batang by = 0.858.

Table 5. Pathway II Summary Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945 ^a	.892	.887	1.34531

a. Predictors: (Constant), Learning Readiness, Learning Discipline, Material, Learning Motivation

The value of R^2 or R square found in table 4.4 of the summary model is 0.892. This indicates that the contribution or influence of learning motivation, learning discipline, teaching materials and learning readiness on the competency of automotive productive training students is 89.2% while the remaining 10, 8% is a contribution from other variables not included in the study.

Pathway Model I Hypothesis Analysis

H1 = Analysis of the effect of learning motivation on student competency: from the analysis above the significance value of learning motivation was $0.029 < 0.050$, it can be concluded that there is a direct significant effect of learning motivation on the competencies of automotive productive training subjects. H2 = Analysis of the influence of learning discipline on student competency, from the analysis obtained the significance value of learning discipline amounted to $0.031 < 0.050$, so it can be concluded that there is a significant influence of learning discipline on the competencies of students in automotive productive training. H3 = Analysis of the influence of teaching materials on

student competencies, from the analysis obtained the significance value of teaching materials is $0,000 < 0,050$, so it can be concluded that there is a direct influence of teaching materials on the competencies of students in automotive productive training.

H4 = Analysis of the effect of learning motivation on learning readiness, from the analysis obtained a significance value of learning motivation of $0.024 < 0.050$ from these results can be concluded that directly there is a significant effect of learning motivation on learning readiness.

H5 = Analysis of the influence of the discipline of learning on learning readiness, from the analysis obtained the value of learning discipline significance of $0.998 > 0.050$ from these results can be concluded that directly there is no significant effect of learning motivation on learning readiness.

H6 = Analysis of the influence of instructional materials on learning readiness, from the analysis obtained the significance value of teaching materials of $0,000 < 0,050$ from these results can be concluded that directly there is a significant effect of teaching materials on learning readiness.

H7 = Analysis of the effect of learning readiness on the competencies of automotive productive education eye students, from the analysis obtained the significance value of learning readiness is $0,000 < 0,050$ from these results.

Path Model II Hypothesis Analysis

Analysis of the effect of learning motivation through learning readiness on the competencies of students in automotive productive training: it is known that the direct effect of learning motivation on student competency is 0.256. While the indirect effect of learning motivation through learning readiness on student competency with the beta value of learning readiness towards student competency is $0.020 \times 0.907 = 0.018$. Then the total effect given by learning motivation on student competency is a direct effect coupled with indirect effects namely: $0.256 + 0.018 = 0.274$. Based on the results of these calculations, it is known that the direct effect value is 0.256 and the indirect effect is 0.018, which means that the value of indirect influence is smaller than the value of direct influence. .

Analysis of the influence of the discipline of learning through learning readiness towards the competencies of students in automotive productive training: it is known that the direct influence of discipline given to students' competencies is 0.023. While the indirect influence of learning discipline through learning readiness on the competence of students with the beta value of learning discipline on students' competencies with the beta value of learning readiness towards student competence is $0.023 \times 0.907 = 0.020$. Then the total influence given by the discipline of learning on student competence is a direct effect added by indirect effects, namely: $0.023 + 0.020 = 0.043$.

Based on the results of these calculations, it is known that the direct effect value is 0.023 and the indirect effect is 0.020, which means that the value of indirect influence is smaller than the value of direct influence. Analysis of the effect of teaching materials through learning readiness on the competencies of students in automotive productive training: it is known that the direct effect of teaching materials on student competence is 0.024. While the indirect effect of X3 through learning readiness on student competencies with beta values of teaching materials on student competence with beta values of learning readiness towards student competence is $0.024 \times 0.907 = 0.021$. So the total influence given by teaching materials on student competence is a direct effect added by indirect effects, namely: $0.024 + 0.021 = 0.043$.

Based on the results of these calculations it is known that the direct effect value is 0.024 and the indirect effect is 0.021, which means that the value of the indirect effect is smaller than the value of direct influence, these results indicate that indirectly teaching materials through learning readiness have no influence on the competencies of students in automotive productive training. From the results of the above calculations, it can be seen that indirectly learning motivation, learning discipline and teaching materials through the variable readiness of learning as an intervening variable does not affect the competency of the students of SMK Bhakti Praja Batang in automotive

productive training. Thus the existence of intervening variables in this study is not used because it cannot strengthen the value of the influence of independent variables on the dependent variable.

CONCLUSION

Analysis of the effect of learning motivation on student competence: from the analysis it was concluded that directly there was a significant effect of learning motivation on student competence. Learning discipline towards student competencies, from that there is a direct significant influence of learning discipline on the competencies of automotive productive training eye students. Analysis of the influence of teaching materials on student competency, it is concluded that there is a direct influence of teaching materials on the competency of automotive productive education courses. From the results of path 2 analysis, it can be seen that learning motivation, learning discipline and teaching materials indirectly through the learning readiness variable as an intervening variable do not affect the competency of the students of SMK Bhakti Praja Batang in the automotive productive training. Thus the existence of intervening variables in this study is not used because it cannot strengthen the value of the influence of independent variables on the dependent variable. While directly the variables of learning motivation, learning discipline and teaching materials significantly influence the competence of students in automotive productive training courses at SMK Bhakti Praja Batang.

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