The Influence of Learning Style and Creativity Toward Student Achievement Index

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Abstract. The aims of this research were to examine the positive and significant effect between Learning Style and Creativity on Student Achievement Index in Automotive Engineering Education at Muhammadiyah University Purworejo. This research is included ex-post facto, this research is included ex-post facto, while this research uses a quantitative approach. The population in this study were all sixth-semester students of Muhammadiyah University of Purworejo, amounting to 65 students and 48 students were taken as samples with the Simple Random Sampling technique. The instrument used in this study was a questionnaire and documentation. Analysis of the data used in this research is descriptive analysis and regression analysis. The results of the analysis show the value of R^2 is 0.549 means that the variable chosen on the independent variable (learning style and student creativity) can explain the dependent variable (student achievement index) with a contribution of 54.90% while the remaining 45.10% explained by other variables.

Keywords: learning style, student creativity

1.   Introduction

In learning activities, students have different learning styles in different situations, making it possible for each individual or student to have many learning styles depending on the situation. According to Sukadi (in papilia and neleke, 2016) revealed that "learning style is a combination of the way a person absorbs knowledge and how to organize and process information or knowledge obtained". Because according to Prashign (in papilia and neleke, 2016), the key to success in learning and working is to know the learning or working style that is unique from each person, accepting strengths as well as self-weaknesses and as much as possible adjusting personal preferences in each learning situation, assessment, and work. However, the ability of students should not be overlooked or even sacrificed, each lecturer has been able to find an effort to pay more attention to differences in learning styles in the learning provided. According to Ghozali in Suyitno (2018: 01) "Education is supposed to be able to invest knowledge, skills, and values that will be able to improve human abilities in living" (Education should be able to invest knowledge, skills, and values that will can increase the ability of humans in life). In this case educators around the world acknowledge differences in learning styles and the need for learning to be adapted to differences in learning styles that exist in them as well.

Good learning achievement must be determined by how the different learning styles process and each learning style has positive and negative values. But the most influences learning patterns on learning achievement are the students themselves. If he has a high motivation to develop learning patterns then the learning patterns will improve and the results of the achievements will also improve.

Besides, everyone has creative potential in different degrees and different fields. By thinking creatively, a person can bring out new ideas and discoveries that are beneficial to society. Creativity will arise in individuals who have high motivation, curiosity, and imagination. A creative person will always look for and find answers.

In a broader sense, creativity means a process that is reflected in fluency, flexibility, and originality of thinking. According to Yeni Rachmawati (2011: 13), creativity is the ability of someone to bring out something new, either in the form of ideas or real works that are relatively different from what already exists. The new thing does not require something that the elements may already exist before, but individuals find new combinations, relationships, and constructs that have qualities that are different from the previous state. So something new is innovative.

According to Chaplin (2011: 14) suggested producing the ability for new forms in art, or in machining, or in solving problems with new methods. Creativity is an individual mental process that brings out ideas, processes, or methods to solve a problem.

From the information above, it can be understood that creativity is not only related to good and interesting findings but more to the findings that show application and may be rather boring so make the creative aspects invisible. In undertaking this creative process, it cannot be fixated on one thing because it is rigid and obsessed with creativity. Sometimes it takes a subjective attitude and pays attention to opinions based on feelings. Besides, a proactive attitude in acting is also required in undertaking the creative process.

Based on the description above, creativity plays an important role in the attainment of a student's learning achievement. Therefore, in the teaching and learning process, a lecturer is demanded to be able to bring out the creative attitudes to the students. Through the development of creative attitudes, students can find ideas and understanding of new concepts in solving problems in teaching and learning activities. A creative student has more ability than other friends who are not creative. Creative students will use existing methods and obtained ideas to solve problems encountered and be able to explore the subject that has been explained by the teacher. So the creative students will get a good learning achievement than other students who do not have creativity.

Based on the above, the authors are interested in examining the positive and significant influence between Learning Style and Creativity on Student Achievement Index in Automotive Engineering Education at Muhammadiyah University of Purworejo.

2. Methods

Following the problems and objectives, this research is included ex-post facto, while this research uses a quantitative approach. According to Sukadi (2015: 8), quantitative research can be interpreted as a research method based on the philosophy of positivism, used to examine certain populations or samples, data collection using research instruments, quantitative/statistical data analysis, to test the hypothesis that has been set. This research was conducted at Muhammadiyah

University of Purworejo, Jl. K.H. Ahmad Dahlan No. 3 Purworejo. The population in this study were all sixth-semester students of Muhammadiyah University of Purworejo, amounting to 65 students and 48 students were taken as samples with the Simple Random Sampling technique. The instrument used in this study was a questionnaire and documentation. Analysis of the data used in this research is descriptive analysis and regression analysis.

The results of the study can be concluded that: (1) There is a positive and significant influence between learning styles on the Achievement Index of Muhammadiyah University of Purworejo. Learning style has a ^{t}count of 8.389 with a probability value of 0.0005 <0.05, (2) There is a positive and significant influence between learning creativity on student achievement index. Student's creativity has a ^{t}count of 3,413 with a probability value of 0.001 <0.05, the higher the student creativity, the more it can support the learning process at school and will increasingly meet the needs of the learning process. (3) There is a positive and significant influence between learning styles and learning creativity together on the Student Achievement Index at the University of Muhammadiyah Purworejo. With the calculated F value of 73.011 with a probability of 0.000 <0.05 The results of the analysis show the value of R^2 is 0.549 means that the variable chosen on the independent variable (learning style and student creativity) can explain the dependent variable (student achievement index) with a contribution of 54.90% while the remaining 45.10% explained by other variables.

3. Discussion

A t-test is used to find out how much influence each independent variable has on the dependent variable. The results of calculations with the help of SPSS 16.0 for windows are as follows:

Table 1. Test Results of Learning Creativity

Model		Nonstandard coefficients		Standardized Coefficient	t
		B	Std. Error	Beta	
1	Constant	12.530	20.147	-	2.937
	Learning creativity	.190	.056	.241	3.413

a. Dependent Variable: LEARNING ACHIEVEMENT

The creativity variable has a calculated value of 3,413 with a probability value of 0.001<0.05, then H0 is rejected, which means student creativity has a positive and significant effect on the University of Muhammadiyah Purworejo Achievement Index.

Table 2. Results of T-test Learning Style

Model		Nonstandard coefficients		Standardized Coefficient	t
		B	Std. Error	Beta	
1	constant	12.530	20.147		2.937
	Learning Style	.601	.072	.592	3.413

The learning style variable has a calculated value of 8,389 with a probability value of 0,000<0.05, then H0 is rejected, which means that it has a significant effect on the Students Achievement Index at Muhammadiyah University of Purworejo.

The simple regression analysis has one variable and one independent variable, the mathematical equation is as follows:

$Y = α + ßx$
Note:
$α$ = constant number
$ß$ = constant number that will affect the direction of linear regression or called intercept.

Constant ($α$) = 12,530 states if there is no increase in independent learning style then the dependent (achievement index) of 12,530, the regression coefficient/intercept ($ß$) = 0.601 states that each increase in learning style variables (independent) will increase the number of independents by 0601.

Coefficient

Model		Nonstandard coefficients		Standardized Coefficient	t
		B	Std. Error	Beta	
1	constant	12.530	20.147		2.937
	Learning Style	.601	.072	.592	8.389
	Learning creativity	.190	.056	.241	3.413

Constant ($α$) = 12,530 states that if there is no increase (independent) in student creativity, the dependent (achievement index) is 12,530, regression coefficient / intercept ($ß$) = 0.190 states that each increase in student creativity (independent) variable will increase independent number = 0.190.

This analysis is used to determine the influence of learning style and creativity variables on the achievement index. From the results of data processing with the help of the SPSS 16 program, the following formulas can be arranged:

Table 4. Results of Multiple Linear Regression Calculations

Model		Nonstandard coefficients		Standardized Coefficient	t
		B	Std. Error	Beta	
1	Constant	12.530	20.147	-	2.937
	Learning creativity	.190	.056	.241	3.413

Summary Model

Model	R	R Square	Appropriate to R square	Std. Estimated Error
1	.741[a]	.549	.541	4.21999

From the process above, with the help of SPSS 16.0 for windows, the following equation is compiled:

$$Y = a + b_1X_1 + b_2X_2 + e$$
$$Y = 12.530 + 0.601 X_1 + 0.190 X_2$$

From the regression equation above, several things can be explained as follows:

1) Achievement Index of Muhammadiyah University Purworejo, learning styles, and student creativity has a regression coefficient of 63,829.
2) If the learning style increases by one-unit or one level, it will increase the Achievement Index of the University of Muhammadiyah Purworejo by 64,617 assuming the other variables are fixed or (zero).
3) Every time there is an increase in learning creativity by one unit, it will increase the University of Muhammadiyah Purworejo Achievement Index by 65,674 assuming other variables are fixed (zero).

F test is used to determine whether the independent variables simultaneously or jointly affect the dependent variable.

Model	Number of Squares	df	Average Squared	F	Sig.
Regression	350.285	2	175.143	73.011	.000[a]
Remainder	17006.915	52	327.056		
Total	17357.200	54			

Predictors: (Constant), LEARNING CREATIVITY, LEARNING STYLE
Dependent Variable: LEARNING ACHIEVEMENT

From the results of multiple linear regression tests obtained Fcount value of 73.011 with a probability of 0.000 <0.05 means that there is a very strong significant influence between learning styles and learning creativity together toward the Achievement Index in Muhammadiyah University of Purworejo.

Based on the results of the analysis show the value of R2 is 0.549, which means that the variable chosen in the independent variable (learning style and creativity) can explain variations in the achievement index variable with a contribution of 54.90% and the remaining 45.10% is explained by other variables.

4. Conclusion

The results of the study can be concluded that: (1) There is a positive and significant influence between learning styles on the Achievement Index of Muhammadiyah University of Purworejo. Learning style has a ^{t}count of 8.389 with a probability value of 0.0005 <0.05, (2) There is a positive and significant effect between learning creativity on student achievement index. Student creativity has a ^{t}count of 3,413 with a probability value of 0.001 <0.05. The higher the student creativity, the more it can support the learning process at school and will increasingly meet the needs of the learning process. (3) There is a positive and significant influence between learning styles and learning creativity together on the Student Achievement Index at Muhammadiyah University of Purworejo. With the calculated F value of 73.011 with a probability of 0.000 <0.05. The results of the analysis show the value of R2 is 0.549 means that the variable chosen on the independent variable (learning style and student creativity) can explain the dependent variable (student achievement index) with a contribution of 54.90% while the remaining 45.10% explained by other variables.

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