



Positive Contribution of Creativity and Independence to Student Learning Outcomes in Digital Communication Simulation

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ABSTRACT

This study aims to measure and analyze the contribution of creativity and independence to student learning outcomes in the tenth-grade digital communication simulation subject in the Department of Tourism. This type of research is quantitative with a correlational approach. The population of this research is 287 people. Sampling in this study was carried out using a proportional random sampling technique. Samples were taken randomly, as much as 20% of the total population. So that 57 respondents were obtained as a sample. The data collection instrument used a questionnaire using a Likert scale. The data analysis technique in this study used simple regression analysis and multiple regression. The results showed the regression equation, $Y = 20,211 + 0,274X_1 + 0,292X_2$. The data analysis result also showed that learning creativity contributed to learning outcomes by 32.4%. Learning independence contributed to learning outcomes by 42.7%, and learning creativity and learning independence contributed to learning outcomes by 49.5%. Based on these results, learning creativity and learning independence contribute to student learning outcomes in the tenth-grade digital communication simulation subject of the Tourism Department.

1. Introduction

Development is a process that occurs gradually and thoroughly, covering various aspects of life (Castillo-Vergara et al., 2018; Hartley et al., 2016; Zandler & Greiner, 2020). One aspect of life that has an important role in development is education (Jang, 2009; Soh, 2017). As a developing country, Indonesia is currently working to reform its education system due to its important role. Through education, a country can create quality and reliable human beings in the future (Hidayat et al., 2017; Sundayana, 2016).

To realize this, the government has made efforts to improve the education system, including regional autonomy, which directly affects education planning, implementation, and evaluation (Bey & Narfin, 2013; Rachmayani, 2014). Previously the management of education was under the central authority, with the implementation of regional autonomy. In that case, the authority rests with the regional, city, or district governments. A fairly basic change is needed in the National Education System. Various parties consider being unable to provide provisions and prepare students to compete with other nations in the world. This fundamental change is related to the curriculum, which demands changes in other education components (Darsono, 2009; Machin, 2014; Slameto, 2003). Quality human resources are needed to realize these goals. Humans master various fields of science, technology, skills, and have discipline and broad insight. It cannot be separated from education because education is a process that gives students knowledge and skills and inculcates positive attitudes. With all these talents, it is hoped that students can lead a good life (Munandar & Utami, 2009; Sierra, 2020; Sundayana, 2016).

One indication of the lack of success in education is the lack of student learning outcomes, one of the causes of the lack of creativity in the teaching and learning process. Creativity is important because being creative people can manifest themselves. Self-change is one of the basic human life needs (Lassig, 2020; Tsai et al., 2015). Second, creativity or creative thinking as the ability to see various possible explanations for a problem, is a form of thought that has received less attention in formal education (Bi et al., 2020; Sadeghi & Ofoghi, 2011). Third, being busy creatively is useful and gives individuals satisfaction (Gralewski & Karwowski, 2019). Fourth, creativity enables humans to improve their quality of life (Slavin,

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2011; Suryabrata, 2007). The business results' activities reflect their creativity; in other words, business activities are important things to start creativity.

SMKN 2 Bukittinggi is one of the vocational schools under the auspices of the Ministry of National Education and is a vocational high school group consisting of several departments, including the Tourism department. The school has made various efforts to improve education quality, including enforcing rules related to student discipline and producing graduates who meet the quality and quantity requirements.

Digital communication simulation subjects are one of the subjects given to students of the Department of Tourism. Digital communication simulation subjects require accuracy, persistence, technique, and student activeness in learning. Each time the learning process provides new techniques and knowledge for students, it will be very difficult to understand without the seriousness and creativity of students' learning.

Based on the results of the author's observations plus interviews with the teacher on October 16, 2020, at the State Vocational High School 2 Bukittinggi in the tenth grade students of the Tourism Department, from the interview referees and the author's observations that most students are less creative in learning, this can be indicated by the lack of creativity. In carrying out the learning process, students are more silent if the questions are asked and are less effective in expressing opinions, in constructing tasks at home students only focus on what is explained, this is possible because students are less interested in digital communication simulation subjects, or do not understand the material explained by the teacher, so that when given a task by the teacher they cannot do it, and do not try to find information from other sources and students also like to neglect in carrying out tasks with this, it can be seen that the score obtained is not optimal, while the Kri standard The specified minimum completeness (KKM) is ≤ 75 .

The learning outcomes of digital communication simulation subjects are still much below the KKM based on the author's data in the tenth grade of SMKN 2 Bukittinggi. It can be seen from the first-semester test scores for 2020/2021, presented in Table 1.

Table 1. The average UTS score for the Digital Communication Simulation Subject of the Tourism Department in 2020/2021

Class	The Number of Students	Average	Students complete		Students do not complete	
			F	%	F	%
X Perhotelan 1	36	38,67	2	5.56	34	94.44
X Perhotelan 2	36	51,97	5	13.89	31	86.11
X Perhotelan 3	36	47,61	8	22.22	28	77.78
X Tata Boga 1	36	53,00	8	22.22	28	77.78
X Tata Boga 2	36	59,33	13	36.11	23	63.89
X Tata Boga 3	36	47,19	3	8.33	33	91.67
X UPW	36	62,47	11	30.56	25	69.44
X Busana	35	59,77	12	34.29	23	65.71
Total	287		62	21.60	225	78.40

From the table of research objects above, it can be said that the learning outcomes of Digital Communication Simulation Subjects were obtained as many as 225 students (78.40%) below the KKM. In comparison, 62 students (21.60%) got a score above the KKM. The results obtained are not satisfactory, not following existing competency standards. Besides the lack of supporting facilities and infrastructure in the learning process, such as incomplete library books, students difficult to find sourcebooks, so students are lazy and do not have curiosity. Broad and deep. It is feared that this phenomenon will not create creative humans who can give meaning to something in a situation that continues to develop.

In addition to student learning creativity, the learning outcomes level is also influenced by the independent learning factor (Bey & Narfin, 2013; Sundayana, 2016). In line with this opinion, two factors affect learning outcomes, internal and external factors. One of the internal factors is psychological factors consisting of intelligence, talents, interests, independence, motivation, emotions, and cognitive abilities. Independent learning is a key element in achieving educational goals. Students are more actively involved in learning with independence in learning, ultimately leading to student learning outcomes according to predetermined standards (Jumaisyaroh et al., 2015; Rachmayani, 2014).

The purpose of this study was to measure the contribution of creativity and independence to student learning outcomes in the tenth-grade digital communication simulation subject of the Tourism Department at SMK Negeri 2 Bukittinggi.

2. Methods

This research was conducted using quantitative methods through a correlational approach. This research was conducted in October 2020 at SMKN 2 Bukittinggi in the 2020/2021 academic year. This study's population was all tenth-grade students at SMKN 2 Bukittinggi, with 287 students. The details of the population in this study are presented in Table 2.

Table 2. Research Population

Class	The number of students
X Perhotelan 1	36
X Perhotelan 2	36
X Perhotelan 3	36
X Tata Boga 1	36
X Tata Boga 2	36
X Tata Boga 3	36
X UPW	36
X Busana	35
Total	287

Sampling in this study was carried out by proportional random sampling by 20% of the population. The population as a sample is 57 students. This study's data were primary data, which is directly obtained from distributing questionnaires to respondent's secondary data and midterm examination scores for ICT subjects.

The data analysis technique used was the data description: mean, median, mode, standard deviation, testing requirements analysis, normality test, homogeneity test, linearity test, independent test independent variables, and hypothesis using simple regression and multiple regression.

3. Result and Discussion

This study's first hypothesis was learning creativity that contributed to tenth-grade students' learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi. To determine the contribution of learning creativity to learning outcomes, simple regression, and simple correlation were used. Following the results of the calculation, the correlation coefficient between learning creativity and learning outcomes was 0.569. The summary of the analysis results can be seen in Table 3.

Table 3. Results of Correlation Analysis Between Learning Creativity Variables (X1) and Learning Outcomes (Y)

Correlation	The correlation coefficient (r)	The coefficient of determination (r ²)	Contribution	ρ
ryx ₁	0,569	0,324	32,4%	0,000

Table 3 showed that the correlation coefficient (ryx₁) = 0,569 with $\rho = 0,000 < \alpha = 0,05$. There is a significant relationship between learning creativity, and learning outcomes, which is quite strong. The coefficient of determination (r²) is 0.324. Furthermore, the regression efficiency significance test was carried out. The summary of the analysis results can be seen in Table 4.

Table 4. Regression Coefficient Test of Learning Creativity on Learning Outcomes

Source	Coefficient	t	Sig
Constant	16.183	1.579	.120
Learning Creativity	.509	5.134	.000

A simple regression analysis was performed to determine the form of predictive relationship between learning creativity and learning outcomes. The results of the analysis obtained a regression equation $\hat{Y} = 16,183 + 0,509X_1$. The regression equation explains that each increase in learning creativity by one scale will increase learning outcomes by a 0.509 scale. Based on the results of the analysis above, it is believed that the research hypothesis, which states that learning creativity contributes to learning outcomes, can be accepted within the 95% confidence level.

Furthermore, it can be interpreted that the learning creativity factor has a very significant predictive power towards learning outcomes. The contribution of learning creativity to tenth-grade students' learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi was 32.4%.

The second hypothesis was independent learning contribution to tenth-grade students' learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi to determine how independent learning outcomes used simple regression and correlation. Following the results of the calculation, the correlation coefficient of learning independence and learning outcomes was 0.654. The summary of the analysis results can be seen in Table 5.

Table 5. Correlation Analysis Between Learning Independence Variables (X2) and Learning Outcomes (Y)

Correlation	The correlation coefficient (r)	The coefficient of determination (r ²)	Contribution	ρ
ryx ₁	0,654	0,427	42,7%	0,000

Hasil perhitungan pada Tabel 4 menunjukkan bahwa koefisien korelasi (ryx₁) = 0,654 dengan $\rho = 0,000 < \alpha = 0,05$. Ini berarti bahwa terdapat hubungan yang signifikan antara kemandirian belajar dengan hasil belajar yang kuat. Besarnya koefisien determinasi (r²) sebesar 0,427. Selanjutnya dilakukan uji keberartian koefisien regresi. Rangkuman hasil analisis dapat dilihat pada Tabel 6.

Table 6. Learning Independence Regression Coefficient Test Results on Learning Outcomes

Source	Coefficient	t	Sig
Constant	41.771	9.820	0.000
Independent learning	0.390	6.406	0.000

A simple regression analysis was performed to determine the predictive relationship between independent learning and learning outcomes. Following the results of the analysis obtained a regression equation $\hat{Y} = 41,771 + 0,390X_2$. The regression equation explains that each increase in learning independence by one scale will increase learning outcomes by 0.390 scales. At the same time, the score of learning outcomes was 41,771 on the scale without learning creativity.

Furthermore, it can be interpreted that the learning independence factor had a very significant predictive power towards learning outcomes. The contribution of independent learning to tenth-grade student learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi was 41.7%.

The third hypothesis tested in this study were learning creativity, and learning independence contribute to learning outcomes. A multiple correlation analysis was carried out to test. After being analyzed, the multiple correlation coefficient of learning creativity and learning independence, and learning outcomes was 0.703. The calculation results can be seen in Table 7.

Table 7. Correlation Analysis Between Learning Creativity Variables (X1) and Learning Independence (X2) and Learning Outcomes (Y)

Correlation	The correlation coefficient (r)	The coefficient of determination (r ²)	Contribution	ρ
Ry _{X1X2}	0,703	0,495	49,5%	0,000

Table 7 shows that the correlation coefficient (ry_{X1X2}) = 0,703 with $\rho = 0,000 < \alpha = 0,05$. Thus, there is a significant relationship between learning creativity and independent learning. Tenth-grade

students' learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi amount to 49.5%.

Multiple regression analysis and regression equations can be performed to determine whether or not the form of a predictive relationship between learning creativity and learning independence on learning outcomes. $\hat{Y} = 20,211+0,274X_1+0,292X_2$. This equation tested for its significance. The calculation results can be seen in Table 8.

Table 8. Regression Analysis of Variable Learning Creativity (X1) and Learning Independence (X2) Against Learning Outcomes (Y)

Source	squares	dk	Squares Average	F _{hitung}	ρ
Regresi	1264.669	2	632.334	26.429	.000 ^a
Residu	1291.998	54	23.926		
Total	2556.667	56			

Table 8 shows that $F_{hitung} = 26,429$ with $\rho = 0,000 < \alpha 0,05$. The regression equation is significant at the 95% confidence level and can predict learning outcomes.

Furthermore, the regression efficiency significance test was carried out. The summary of the analysis results can be seen in Table 9.

Table 9. Summary of Regression Coefficient Test Results

Source	Coefficient	T	Sig
Constant	20.211	2.248	.029
Learning creativity	.274	2.682	.010
Independent learning	.292	4.270	.000

Table 9 showed that the t score of the learning creativity regression coefficient was 2.682. The significance level was 0.010, while the t learning independence regression coefficient was 4.270, with a significance level was 0.000. The regression coefficients were 0.274 and 0.292, which are significant and can predict learning outcomes.

Regression equation model $\hat{Y} = 20,211+0,274X_1+0,292X_2$ explained that the X_1 coefficient was 0.214 and the X_2 coefficient is 0.292. Learning creativity increased by one scale will contribute to an increase in learning outcomes by a 0.274 scale. An increase in learning independence by one scale will contribute to the increase in the learning outcomes was 0.292. Before the score of learning outcomes was a constant, 20.211 on a scale without any influence from the two predictors

Based on the above calculations, the three hypotheses tested in this study can be accepted with 95% confidence. The contribution of learning creativity and learning independence to the learning outcomes of tenth-grade students in digital communication simulation subjects at SMKN 2 Bukittinggi was 49.5%

The results of data analysis and hypothesis testing indicate that the three hypotheses tested in this study can be accepted. The data analysis results indicate that learning creativity and independent learning, both individually and collectively, contribute to improving tenth-grade students' learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi.

DISCUSSION

Contribution of Learning Creativity to Student Learning Outcomes

This study indicates that learning creativity provides a significant contribution to the learning outcomes of tenth-grade students in digital communication simulation subjects at SMKN 2 Bukittinggi by 32.42%. Furthermore, the regression equation obtained by the variable of learning creativity and learning outcomes $\hat{Y} = 16,183 + 0,509X_1$. The regression equation illustrates that the better the learning creativity, the higher the contribution to student learning outcomes. Based on the data analysis conducted on students, it was found that the contribution of learning creativity to student learning outcomes was 14.4%. At the same time, another 86.6% contribution was due to other factors, including internal and external factors.

Learning outcomes as a process to gain motivation in knowledge, skills, habits, and behavior and mastery of knowledge or skills obtained from learning. Someone successful in learning will be seen in

behavior changes (Jang, 2009; Sierra, 2020; Slameto, 2003; Soh, 2017; van Alten et al., 2020). Learning is a mental/psychic activity in active interaction with the environment, which results in changes in knowledge, understanding, skills, and attitude scores (Darsono, 2009; Naik et al., 2020; Susanto, 2013). Learning is also defined as a business process carried out by a person to obtain a whole new change in behavior due to his own experience in interaction with his environment (Gading et al., 2018; Munandar & Utami, 2009; Rajasulochana & Senthil Ganesh, 2019).

Contribution of independent learning to learning outcomes

This study indicates that independent learning provides a significant contribution to the learning outcomes of tenth-grade students in digital communication simulation subjects at SMKN 2 Bukittinggi by 42.7%. Furthermore, the regression equation obtained by the learning independence variable with learning outcomes $\hat{Y} = 41,771 + 0,309X_2$. The regression equation illustrates that the better the independent learning, the higher the contribution to student learning outcomes.

Independence is a desire to do something for yourself. Students are said to learn independently if they can carry out learning tasks without depending on others (Jumaisyaroh et al., 2015; Mu'tadin, 2009). In line with this opinion, independent learning can also be interpreted as a form of learning that has the main responsibility for planning, implementing, and evaluating its business (Bey & Narfin, 2013; Revalina, 2012). Learning independence needs to be given to teaching participants to organize and discipline themselves in developing learning abilities of their own accord to get good learning outcomes.

Independent learning is in line with previous research results, which states that there is a significant effect of independent learning and the family environment on student learning outcomes (Revalina, 2012). Other research also states a positive and significant influence on teacher interaction with students and independent learning on student learning outcomes in twelfth-grade students of Science (Bey & Narfin, 2013).

Contribution of Learning Creativity and Learning Independence on Learning Outcomes

This study indicates that learning creativity and learning independence together contribute to improving student learning outcomes. The contribution of learning creativity and independent learning to student learning outcomes is 49.5%. The regression equation obtained by the variables of learning creativity and learning independence with student learning outcomes was $\hat{Y} = 20,211 + 0,274X_1 + 0,292X_2$. Learning creativity and learning independence together contribute to student learning outcomes.

Data analysis shows that student learning outcomes are significantly affected by learning creativity and learning independence, both individually and collectively. Learning creativity and independent learning are important factors for all parties at SMKN 2 Bukittinggi to pay attention. If creativity in learning is well developed and independent learning is high, then student learning outcomes will increase.

Learning independence needs to be given to teaching participants to regulate and discipline themselves in developing learning abilities on their own accord to get good learning outcomes (Bey & Narfin, 2013; Mu'tadin, 2009; Sundayana, 2016; Suryabrata, 2007). Other factors that determine learning outcomes consist of internal factors: general psychological condition, sensory conditions, intelligence (IQ), talent, independence, motivation, emotional and cognitive abilities, and external factors: social environment, natural environment, curriculum, programs, facilities, and infrastructure (Suryabrata, 2007)

4. Conclusion

Learning creativity contributes to tenth-grade students' learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi by 32.4%. Good creativity will improve student learning outcomes. Learning independence contributed to tenth-grade students' learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi by 42.7%. With the presence of high learning independence, student learning outcomes will increase. Learning creativity and learning independence contribute to tenth-grade students' learning outcomes in digital communication simulation subjects at SMKN 2 Bukittinggi by 49.5%. Learning creativity and learning independence together contribute to learning outcomes.

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