Contribution of Learning Style, Learning Creativity and Exploratory Interest to Students' Simulation and Digital Communication Learning Outcomes during the Covid-19 Pandemic

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A R T I C L E I N F O

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A B S T R A K

Banyak masalah yang terjadi saat pembelajarn daring dilakukan, masalah tersebut adalah bagi Sebagian besar peserta didik lebih memilih belajar tatap muka. Pembelajaran daring tidak menyenangkan karena metode yang digunakan dalam pembelajaran itu-itu saja dan monoton serta pembelajaran daring menyebabkan peserta didik mengalami setres. Penelitian ini bertujuan untuk mengungkap ada kontribusi gaya belajar, kreativitas dan minat eksploratif terhadap hasil belajar simulasi dan komunikasi digital dimasa pandemic covid 19 siswa. Jenis penelitian adalah kuantitatif dengan metode penelitian korelasional. Populasi penelitian ini adalah siswa kelas X. Teknik pengambilan sampel dengan teknik *proporsional random sampling*, dengan jumlah sampel sebanyak 80 orang siswa. Teknik analisis data yang digunakan adalah teknik analisis data kuantitatif. Berdasarkan hasil penelitian, didapatkan bahwa data normal, linier dan tidak terjadi multikolinieritas. Hasil pengujian pada taraf signifikansi α 0,05 (taraf kepercayaan 95%) didapatkan nilai rx_1y sebesar 0,380 dengan r_{tabel} 0,220 karena $r_{hitung} > r_{tabel}$ maka hipotesis pertama diterima. Kemudian nilai rx_2y sebesar 0,695 dengan r_{tabel} 0,220, karena $r_{hitung} > r_{tabel}$ maka hipotesis kedua diterima. Kemudian nilai rx_3y sebesar 0,770 dengan r_{tabel} 0,220, karena $r_{hitung} > r_{tabel}$ maka hipotesis ketiga diterima. Selanjutnya nilai $rx_1x_2x_3y$ sebesar 0,772 dengan r_{tabel} 0,220, karena $r_{hitung} > r_{tabel}$ maka hipotesis keempat diterima. Dan didukung oleh nilai F_{hitung} = 37,262 dan F_{tabel} = 2,723 sehingga diperoleh $F_{hitung} > F_{tabel}$. (37,262 >2,723). Berdasarkan hasil penelitian itu dapat dikatakan bhawa terdapat kontribusi kontribusi gaya belajar, kreativitas dan minat eksploratif terhadap hasil belajar simulasi dan komunikasi digital dimasa pandemic covid 19 siswa

A B S T R A C T

Many problems occur when online learning is carried out, this problem is for most students prefer face-to-face learning. Online learning is not fun because the methods used in learning are monotonous and online learning causes students to experience stress. This study aims to reveal the contribution of learning styles, creativity, and exploratory interest to the learning outcomes of simulation and digital communication during the COVID-19 pandemic. This type of research is quantitative with correlational research methods. The population of this study was students of class X. The sampling technique was proportional random sampling, with a total sample of 80 students. The data analysis technique used is quantitative data analysis techniques. Based on the research results, it was found that the data were normal, linear, and did not occur multicollinearity. The test results at a significance level of α 0.05 (95% confidence level) obtained a rx1y value of 0.380 with an r table of 0.220 because rcount> rtable, the first hypothesis was accepted. Then the rx2y value is 0.695 with rtable 0.220, because rcount> rtable, the second hypothesis is accepted. Then the rx3y value is 0.770 with r table 0.220, because rcount> rtable, the third hypothesis is accepted. Furthermore, the value of rx1x2x3y is 0.772 with rtable 0.220, because rcount> rtable, the fourth hypothesis is accepted. And supported by the value of Fcount = 37.262 and Ftable = 2.723 to obtain Fcount> Ftable. (37,262> 2,723). So, it can be concluded that there is a contribution of learning style, creativity, and exploratory interest to the learning outcomes of simulation and digital communication during the 19 covid pandemics.

Introduction

Currently, the world is shocked by the outbreak of a disease caused by a virus called Corona or known as Covid-19 (Corona Virus Diseases-19). The virus that allegedly started to spread on December 31, 2019 in the Chinese city of Wuhan, is currently spreading to almost all corners of the world so quickly, that the WHO on March 11, 2020 declared the outbreak a global epidemic. Hundreds of thousands of people have been infected

with the virus worldwide, even tens of thousands have died. The difficulty of handling the outbreak has led world leaders to implement super strict policies to break the chain of the spread of Covid-19. Not only casualties, Covid-19 makes changes in all areas of human life, (Dong et al., 2020; Wong et al., 2020). One of the fields that received the impact of this incident is the field of Education. The learning process must be carried out at home, and the learning process that was initially carried out with face-to-face changes to online learning (Mahitsa & Mahardini, 2020; Mishra et al., 2020). Online learning is learning that is carried out outside of school, is more flexible following the wishes of students. Online learning provides opportunities for students to interact with many people independently to achieve learning goals (Hwang et al., 2020). If online learning is carried out in a structured manner and is prepared with the right system and is supported by a learning component, this learning will have a very positive impact.

Many problems occur when online learning is carried out, this problem is for most students prefer face-to-face learning. Online learning is not fun because the methods used in learning are monotonous and online learning causes students to experience stress (Maulana & Iswari, 2020; Patricia, 2020). This problem has led to the addiction of students to devices (Liu et al., 2020). In addition to problems stemming from students, another problem with online learning is that the use of technology also has its problems, many factors hinder the effectiveness of online learning, including the low mastery of technology. We have to admit that not all teachers are technologically literate, especially teachers of generation X (born in 1980 and below), whose use of technology was not yet massive. Furthermore, the limited facilities and infrastructure. Ownership of technology support devices is also a problem in itself. Not all teachers and students can own technological devices such as smartphones. Then, the internet network problem. Not all schools are connected to the internet and not all teachers are used to using it daily. The next problem is cost. To connect to the internet, it requires the cost of purchasing an internet quota, which causes teachers and students to issue a new budget for purchasing internet quota. Meanwhile, not all teachers and students have the extra money to buy it. This is following the results of observations.

Based on observations made by researchers on SMKN 3 Pariaman, it was obtained some information that the learning outcomes of the tenth grade students of SMKN 3 Pariaman are still low. This is evidenced by the daily test scores (UH) of tenth grade students in the SIMKOMDIG subject which are still below the minimum completeness standard, which is below 75. That students who have scores below the minimum completeness standard, below 75 are 244 students , while those above 75 are 156 students. The low learning outcomes originate from internal factors, those that come from within students and external factors that come from outside of students. Based on observations made by researchers on SMKN 3 Pariaman as the object of research, information was obtained that the various learning styles possessed by students caused difficulties in implementing online learning. The next problem, there are still many students who do not have technological devices, so they have to borrow from friends to send assignments given by the teacher. Then, the students' low learning creativity. This can be seen in the attitude of students who passively accept all material provided by the teacher through online learning, without the student's initiative to ask further questions to the teacher. The next problem that is obtained is the low exploratory interest in the students. This can be seen from the attitude of students who do not look for additional references regarding the material being studied. Even though many websites provide online course material. Then, the students were not serious in following the lessons. This can be seen from the attitude of students who are often late in submitting assignments to the teacher and giving only modest answers when given questions by the teacher.

The various obstacles to implementing online learning described above have an impact on the quality of learning itself and lead to student learning outcomes. Learning outcomes themselves are influenced by internal factors and external factors (Sawawa et al., 2018). Internal factors include self-confidence, learning motivation, learning styles, learning creativity, exploratory interest and various other factors. Furthermore, external factors that influence learning outcomes are school climate, teacher teaching skills, teaching methods and other factors. The learning outcome is a behavior change. Behavior as a result of learning in a broad sense includes the cognitive, affective and psychomotor fields (Sudjana Nana, 2005; Syafi'i et al., 2018). Learning outcomes are not only useful in being able to determine whether or not instructional goals are achieved, changes in student behavior, but learning outcomes are also as feedback for efforts to improve the teaching and learning process. Learning outcomes can also be said to be the abilities that students have after they receive their learning experiences (Siregar & Situmorang, 2016; Sudjana Nana, 2005). One of the internal factors that affect learning outcomes is learning styles.

Learning style is an approach that shows how a person learns or how each person learns which concentrates on the process, and masters difficult and new information through different views. This style is individual for each person, so that one person and another will have different learning styles (Wassahua, 2016; Zagoto et al., 2019). Learning style is a characteristic of the cognitive and psycho-social behavior of students in the learning process (Ghofur et al., 2016; Wang et al., 2020). Everyone has different learning styles which are

not the same depending on age, learning achievement and experience (Huang, 2019; Magdalena, 2015; Zahri et al., 2017). A person can learn easily if he finds a learning style that suits him. There are 3 types of learning styles, visual learning styles, auditory learning styles, and kinesthetic learning styles (Putri et al., 2019). The results of research conducted by Chania et al., (2017) show that there is a significant and positive relationship between learning styles and student learning outcomes in biology learning, this is evidenced by rcount (0.089) <rtabel (0, 235), Ha Ho rejected and accepted. Based on the research results, it shows that there is a significant positive relationship between the three learning style variables on student learning outcomes in biology subjects, thus this hypothesis test supports the research. Research conducted by (Putri et al., 2019) states that there is a significant relationship between learning styles and student mathematics learning outcomes; there is a significant relationship between learning activeness on student mathematics learning outcomes, and there is a significant relationship between learning styles and learning activeness together on student mathematics learning outcomes. The next factor that affects learning outcomes is learning creativity.

Learning creativity is an element of the power of reliable human resources to drive human progress in researching, developing, and discoveries in the fields of science and technology, as well as in all fields of human business (Radyuli & Rahmat, 2017). Creativity is the result of creative thinking, therefore the education system should stimulate logical thinking and reasoning (Sambada, 2012). With the creativity of students will be more active in the learning process, this certainly has an impact on the effectiveness of the learning process. The activeness of students in the learning process will make students explore and build their knowledge, so that students will have longer memories and this will have an impact on student learning outcomes. The results of this study are in line with research conducted by Wahyuni & Kurniawan, (2018) showing that the ability to think creatively affects student learning outcomes with insignificant values and the ability to think creatively affects student learning outcomes by 22.5%. Research conducted by Mayora et al., (2018) shows that there is a significant relationship between student creativity and mathematics learning outcomes of eighth grade students of SMP N 1 X Koto Di Atas, Solok Regency, 2017/2018 academic year. This can be seen from the research results obtained Z0 = 3,225585 and Ztabel = 1.95996398, at the real level @ = 0.05. So, the existence of creativity will have an impact on student learning outcomes because students will find and build their knowledge. Apart from the two factors that have been described, another factor that influences learning outcomes is exploratory interest.

Explorative interest is a tendency that makes a person feel attracted to certain fields and feel so enthusiastic about contributing to that field in the form of observing activities (W. S Winkel, 1983 & Anik Pamilu, 2007). The interest in exploration will have an impact on learning outcomes, interest in exploration is the willingness of students to explore the material being learned by students. This will have an impact on the amount of knowledge possessed by students, of course, this will have an impact on student learning outcomes. Student interest in social studies subjects with student learning outcomes has a strong relationship (Budiwibowo, 2016). The results of this study are in line with Yeftha et al., (2020) showing that there is a close relationship between interest and learning outcomes. (learning outcomes) and the magnitude of the determinant coefficient given by X to Y is 12.8%. Research conducted by (Sari et al., 2016) shows that there is an influence of interest and learning motivation on physics learning achievement in class XI IPA students of SMA Negeri 1 Galing Sambas Regency with a determination coefficient value of 0.46, which indicates that 46% of learning achievement Student physics is influenced by interest and learning motivation, while the remaining 54% is influenced by other variables not included in this study.

The purpose of this study was to analyze the relationship between Learning Style, Learning Creativity and Exploratory Interest on Student Learning Outcomes. The results of this study are expected to become information materials for teachers and students to understand student learning styles, learning creativity and increase students' exploratory interest in learning. By knowing this relationship, it can be the basis for innovating learning according to student learning styles which will have an impact on interest, creativity. Increased interest and creativity will affect learning outcomes.

Method

This research uses quantitative research methods with correlational research type. This research was conducted at SMKN 3 Pariaman. This research was conducted in the odd semester of the 2020/2021 school year.). The population used in this study were all of the tenth grade students at SMKN 3 Pariaman, totaling 400 students. In this study, the sampling technique used was proportional random sampling, using the Taro Yamane formula as follows (Riduwan, 2013: 65), the selected sample was 80 students. The research instrument used in this study was a non-test instrument in the form of a questionnaire and for learning outcomes measured by tests. Instrument testing is done with expert validators. Sources of data used in this study are primary data obtained

directly from respondents, by distributing questionnaires to tenth grade students at SMK Negeri 3 Pariaman who have been selected as samples. And also secondary data that has already been collected and reported by people or agencies outside the researchers themselves, such as data on the number of students at SMK Negeri 3 Pariaman. Data analysis was carried out by inferential test with simple correlation and regression techniques. Before the inflation test was carried out, the data obtained were tested with the Prayara test, the normality test, homogeneity test and multicorrelation test.

Result and Discussion

In the description section, this data describes in detail the contribution of learning styles, learning creativity and exploratory interest to the learning outcomes of SIMKOMDIG during the Covid-19 pandemic for tenth grade students at SMKN 3 Pariaman. In this study, the research objects were all students at SMKN 3 Pariaman. The population used in this study were all of the tenth grade students at SMKN 3 Pariaman, totaling 400 students. After taking proportional random sampling, a sample of 80 was obtained. All incoming research data that met the requirements were processed and analyzed to reveal information following the research objectives. The analysis requirements that need to be met are normality, linearity and multicollinearity tests, : Normality test using the Kolmogorav-Smirnov test analysis technique with the SPSS version 21 program at probability $\alpha = 0.05$. The results of the calculation of the normality test for the four variables are presented in Table 1 below.

Table 1. Results of the Variable Normality Test X1, X2, X3 and Y

		X1	**X2**	**X3**	**Y**
N		80	80	80	80
Normal Parameters[a, b]	Mean	122,1500	140,2125	110,6000	22,8125
	Std, Deviation	13,34460	16,82200	13,56055	2,68655
Most Extreme Differences	Absolute	0,087	0,094	0,091	0,085
	Positive	0,087	0,094	0,083	0,085
	Negative	-0,075	-0,069	-0,091	-0,078
Kolmogorov-Smirnov Z		0,779	0,839	0,815	0,757
Asymp, Sig, (2-tailed)		0,578	0,482	0,520	0,615

Sumber: Pengolahan Data Mandiri, 2020

Table 1 shows the probability (sign) of the four variables> $\alpha = 0.05$. The probability (sign) of the learning style variable (X_1) is 0.578, the learning creativity variable (X_2) is 0.482, the exploratory interest variable (X_3) is 0.520 and the learning outcome variable (Y) is 0.615. Thus it can be concluded that Ha is accepted and based on the results of the analysis it can be stated that the data for the four variables are normally distributed. This indicates that one of the conditions for testing the hypothesis has been met. The results of the calculation of the linearity test for learning style variables (X_1), learning creativity (X_2), exploratory interest (X_3) on learning outcomes variables (Y) are presented in Tables 2, 3, and 4:

Table 2. Results of Linearity Test for X1 and Y variables

			F	**Sig,**
Y * X1	Between Groups	(Combined)	19,217	0,000
		Linearity	42,974	0,000
		Deviation from Linearity	17,057	0,000
	Within Groups			
	Total			

Sumber: Pengolahan Data Mandiri, 2020

Based on table 2 above, the probability of linearity (sign) is 0,000 smaller than 0.05, so it can be concluded that the distribution of independent variable data forms a linear line to the dependent variable.

Table 3. Results of Linearity Test for X2 and Y variables

			F	Sig,
Y * X2	Between Groups	(Combined)	9,645	0,000
		Linearity	88,184	0,000
		Deviation from Linearity	2,505	0,011
	Within Groups			
	Total			

Sumber: Pengolahan Data Mandiri, 2020

Based on table 3 above, the probability of linearity (sign) is 0.000 smaller than 0.05, so it can be concluded that the distribution of independent variable data forms a linear line to the dependent variable.

Table 4. Linearity Test Results for X3 and Y Variables

			F	Sig,
Y * X3	Between Groups	(Combined)	11,729	0,000
		Linearity	123,159	0,000
		Deviation from Linearity	1,599	0,119
	Within Groups			
	Total			

Sumber: Pengolahan Data Mandiri, 2020

Based on table 4 above, the probability of linearity (sign) of 0,000 is obtained smaller than 0.05, so it can be concluded that the data distribution of the independent variables forms a linear line to the dependent variable. Because the linearity test has been fulfilled, it can be continued with the multicollinearity test. The multicollinearity test was carried out with auxiliary regression analysis using the assistance of the IBM SPSS version 21.0 program. Based on the multicollinearity test that has been carried out, the following results are obtained:

Table 5. Multicollinearity Test

Variabel Independen	Variabel Dependen	Nilai r square (r^2)
X1	X2	0,517
X2	X3	0,671
X3	X1	0,492
Nilai R^2		**0,772**

Based on table 5, it can be seen that the r^2 coefficient value obtained is entirely smaller than the coefficient of determination (R^2). Thus it can be concluded that there is no multicollinearity problem in the regression model. Hypothesis testing for this study was tested using simple correlation and regression techniques. Hypothesis testing is carried out with the help of the IBM SPSS 21 application. The first hypothesis in this study is that there is a contribution between learning styles and learning outcomes at SMKN 3 Pariaman. The hypothesis was tested using a simple regression technique with the stepwise method. Based on the simple correlation analysis in table 6, it can be seen that the correlation coefficient rcount for N = 80 and the error rate of 5% is r table = 0.220. With the provision if (rcount <rtabel) there is no contribution between learning styles and learning outcomes at SMKN 3 Pariaman (H0). Furthermore, if (rhitung> rtabel) there is a contribution between learning styles and learning outcomes at SMKN 3 Pariaman (Ha). Based on the results of the analysis carried out, the value of rcount> rtable (0.380> 0.220) was obtained. This shows that the learning style has a positive relationship with learning outcomes which is equal to 0.380. So it can be concluded that learning styles and learning outcomes have a significant correlation at the 5% error level. Furthermore, the price rcount = 0.380 and rtable = 0.220. So that it can be said that r count (0.380)> r table (0.220) or significant <alpha (0.000 <0.005), then the rsquare is obtained of 0.144. This shows that the contribution that occurs between learning styles and learning outcomes is 0.144 or 14.4%, meaning that the better the learning style, the better the learning outcomes. This shows that learning styles contribute positively to learning outcomes by 14.4%. For the results of simple correlation analysis, the variables X1 and Y are described in Table 6 below.

Table 6. Results of Simple Correlation Analysis for Variables X1 and Y Using the Coefficient Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig,
		B	Std, Error	Beta		
1	(Constant)	13,468	2,591		5,199	0,000
	X1	0,077	0,021	0,380	3,628	0,001

Based on Table 6, the T test can be carried out to test the level of difference between one coefficient of certain independent variables and other independent coefficients, if there is more than one independent variable resulting from the regression equation in determining changes in the value of the dependent variable which is assessed with an alpha level of 5% which is an error rejecting data. Through this research, it was obtained a significance value of 0.000, based on Table 6, the t value for the learning style variable was obtained with a value of t = 3.628 with a significance value obtained of 0.001. To be able to find out how big the level of the relationship there is to the two variables above, an assessment can be made as follows. If the value of tcount> ttable, then there is a significant relationship, if tcount <ttable then there is no significant relationship. The value of t table at 5% alpha is dk = N-3 or dk = 80-3 = 77, the value of t table is 1.991. When compared to tcount 3,628 with ttable 1,991, it can be seen that tcount> ttable. Therefore, it can be concluded that there is a relationship between learning styles and learning outcomes at SMKN 3 Pariaman.

The second hypothesis in this study is that there is a contribution between learning creativity and learning outcomes at SMKN 3 Pariaman. The hypothesis was tested using a simple regression technique with the stepwise method. Based on simple correlation analysis, it can be seen that the correlation coefficient rcount for N = 80 and the error rate of 5% is rtabel = 0.220. With the provision if (rcount <rtabel) there is no contribution between learning creativity and learning outcomes at SMKN 3 Pariaman (H0). Furthermore, if (rhitung> rtabel) there is a contribution between learning creativity and learning outcomes at SMKN 3 Pariaman (Ha). based on the results of the analysis carried out, the value of rcount> rtable (0.695> 0.220) was obtained. This shows that creativity has a positive relationship with learning outcomes, 0.695. So it can be concluded that learning creativity and learning outcomes at SMKN 3 Pariaman have a significant correlation at the 5% error level. Furthermore, the price rcount = 0.695 and rtable = 0.220. So that it can be said that r count (0.695)> r table (0.220) or significant <alpha (0.000 <0.005), then the rsquare is obtained of 0.483. This shows that the contribution that occurs between learning creativity and learning outcomes is 0.483 or 48.3%, meaning that the better learning creativity, the better learning outcomes. This shows that creativity contributes positively to learning outcomes by 48.3%. For the results of simple correlation analysis, the variables X2 and Y are described in Table 7 below

Table 7. Results of Simple Correlation Analysis for Variables X2 and Y Using the Coefficient Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig,
		B	Std, Error	Beta		
1	(Constant)	7,257	1,837		3,951	0,000
	X2	0,111	0,013	0,695	8,529	0,000

Based on Table 7, the T test can be carried out to test the level of difference between one coefficient of certain independent variables and other independent coefficients, if there is more than one independent variable resulting from the regression equation in determining changes in the value of the dependent variable which is assessed with an alpha level of 5% is an error rejecting data. Through this study, a significance value of 0.000 was obtained, the constant formed was 7.257, while the standard regression coefficient was 0.111. Based on Table 7, the t value for the motivation variable is obtained with a tcount = 8,529 with a significance value obtained of 0,000. To be able to find out how big the level of the relationship there is to the two variables above, an assessment can be made as follows. If the value of tcount> ttable, then there is a significant relationship, if tcount <ttable then there is no significant relationship. The value of t table at 5% alpha is dk = N-3 or dk = 80-3 = 77, the value of t table is 1.991. When compared to tcount 8,529 with ttable 1,991, it can be seen that tcount> ttable. Therefore, it can be concluded that there is a relationship between learning creativity and learning outcomes at SMKN 3 Pariaman.

The third hypothesis in this study is that there is a contribution between exploratory interest and learning outcomes at SMKN 3 Pariaman. The hypothesis was tested using a simple regression technique with the stepwise method. Based on simple correlation analysis, it can be seen that the correlation coefficient rcount for N

= 80 and the error rate of 5% is rtabel = 0.220. With the provision that if (rcount <rtabel) there is no contribution between explorative interest and learning outcomes at SMKN 3 Pariaman (H0). Furthermore, if (rhitung> rtabel) there is a contribution between explorative interest and learning outcomes at SMKN 3 Pariaman (Ha). based on the results of the analysis carried out, the value of rcount> rtable (0.770> 0.220) was obtained. This shows that explorative interest has a positive relationship with learning outcomes, 0.770. So it can be concluded that exploratory interest with learning outcomes at SMKN 3 Pariaman has a significant correlation at the 5% error level. Furthermore, the value of rcount = 0.770 and rtable = 0.220. So it can be said that r count (0.770)> r table (0.220) or significant <alpha (0.000 <0.005), then the rsquare is 0.593. This shows that the contribution that occurs between exploratory interest and learning outcomes is 0.593 or 59.3%, meaning that the better the explorative interest, the better the learning outcomes. This shows that exploratory interest has a positive contribution to learning outcomes by 59.3%. For the results of simple correlation analysis, the variables X3 and Y are described in Table 8 below

Table 8. Results of Simple Correlation Analysis for Variables X3 and Y Using the Coefficient Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig,
		B	Std, Error	Beta		
1	(Constant)	5,941	1,595		3,725	0,000
	X3	0,153	0,014	0,770	10,657	0,000

Based on table 8, the T test can be carried out to test the level of difference between one coefficient of a certain independent variable and other independent coefficients, if there is more than one independent variable resulting from the regression equation in determining changes in the value of the dependent variable which is assessed with an alpha level of 5% which is an error rejecting data. Through this study, a significance value of 0.000 was obtained, the constant formed was 5.941, while the standard regression coefficient was 0.153. Based on Table 8, the t value for the motivation variable is obtained with a value of t = 10.657 with a significance value obtained of 0.000. To be able to find out how big the level of the relationship there is to the two variables above, an assessment can be made as follows. If the value of tcount> ttable, then there is a significant relationship, if tcount <ttable then there is no significant relationship. The value of t table at 5% alpha is dk = N-3 or dk = 80-3 = 77, the value of t table is 1.991. When compared to tcount 10.657 with ttable 1.991, it can be seen that tcount> ttable. Therefore, it can be concluded that there is a relationship between exploratory interest and learning outcomes at SMKN 3 Pariaman.

The fourth hypothesis in this study is that there is a contribution between learning styles, learning creativity and exploratory interest together on the learning outcomes of simulation and digital communication of class X students at SMKN 3 Pariaman. Based on simple correlation analysis, it can be seen that the correlation coefficient rcount for N = 80 and the error rate of 5% is rtabel = 0.220. With the provision that (rhitung <rtabel) there is no contribution between learning styles, learning creativity and exploratory interest with learning outcomes at SMKN 3 Pariaman (H0). Furthermore, if (rhitung> rtabel) there is a contribution between learning styles, learning creativity and exploratory interest with learning outcomes at SMKN 3 Pariaman (Ha). based on the results of the analysis carried out, the value of rcount> rtable (0.772> 0.220) was obtained. This shows that learning styles, learning creativity and exploratory interest together have a positive relationship with learning outcomes, 0.772. So it can be concluded that learning style, learning creativity and exploratory interest together with learning outcomes have a significant correlation at the 5% error level. Furthermore, the value rcount = 0.772 and rtable = 0.220. So that it can be said that r count (0.772)> r table (0.220) or significant <alpha (0.000 <0.005), then the rsquare is 0.595. This shows that the contribution that occurs between learning styles, learning creativity and exploratory interest together with learning outcomes is 0.595 or 59.5%, meaning that the better learning style, learning creativity and exploratory interest together, the more good learning outcomes too. This shows that learning style, learning creativity and exploratory interest together contribute positively to learning outcomes by 59.5%. To see the significance of the regression equation formed, an F test was carried out on the learning style variables, learning creativity and exploratory interest to know whether the independent variables (X1, X2, X3) together were significantly related to the dependent variable (Y). The F test was obtained through the help of the SPSS version 21 program, the results of which can be seen in Table 9 below.

Table 9. F Test Analysis

	Model	Sum of Squares	df	Mean Square	F	Sig,
1	Regression	339,422	3	113,141	37,262	0,000[b]
	Residual	230,766	76	3,036		
	Total	**570,188**	**79**			

Based on Table 9, it can be seen that the statistical significance value in the F test is 37.262 with a probability of 0.000, because the probability value is smaller than alpha 0.05 or at the 95% confidence level. For the two-party test, the Ftable obtained is 2.723. Obtained value Fcount> Ftable then H0 is rejected, meaning that there is a relationship between learning styles, learning creativity and exploratory interest with learning outcomes at SMKN 3 Pariaman. With the presence of a significant correlation, it can be concluded that learning style, learning creativity and exploratory interest together contribute positively to learning outcomes at SMKN 3 Pariaman by 59.5%. For the results of multiple regression analysis the variables X_1, X_2 and X_3 on Y can be explained in Table 10 below.

Table 10. Results of Multiple Regression Analysis for Variables X1, X2 and X3 Against Y Using the Coefficient Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig,
		B	Std, Error	Beta		
1	(Constant)	5,750	2,000		2,875	0,005
	X1	-0,002	0,017	-0,011	-0,125	0,901
	X2	0,016	0,024	0,103	0,676	0,501
	X3	0,136	0,030	0,686	4,588	0,000

Based on the analysis of the learning style regression coefficient (X1), learning creativity (X2), and explorative interest (X3) together with learning outcomes (Y), the significance value is 0.000 with a constant value of 5.750 while the coefficient of the multiple regression equation is Y ˆ = a + b1X1 + b2X2 + b3X3 where a = 5,750, b1 = (-0,002), b2 = 0,016, and b3 = 0,136. The regression equation formed is significance Y ˆ = 5.750 + (-0.002) X1 + 0.016 X2 + 0.136 X3. So, there is a significant relationship between learning styles, learning creativity and exploratory interest in simulation learning outcomes and digital communication during the Covid-19 pandemic for grade X students at SMKN 3 Pariaman. Some of the findings of this study are following the results of the study.

First, there is a contribution between learning styles and learning outcomes. Learning styles are important for the learning process, adjusting learning styles with learning methods will have an impact on learning outcomes because students will learn according to their respective styles. Learning style is a characteristic of the cognitive and psycho-social behavior of students in the learning process (Ghofur et al., 2016; Wang et al., 2020). Everyone has different learning styles which are not the same depending on age, learning achievement and experience (Huang, 2019; Magdalena, 2015; Zahri et al., 2017). A person can learn easily if he finds a learning style that suits him. There are 3 types of learning styles, visual learning styles, auditory learning styles, and kinesthetic learning styles (Putri et al., 2019). The appropriate learning style will help students learn more comfortably and understand the material more easily. Learning styles will determine learning outcomes well if, 1) the learning process follows the learning styles of students, students will emphasize the learning styles they have, 2) students will show different abilities in understanding information, 3) learning outcomes following the model learning will have an impact on learning outcomes (Dekker et al., 2012; Martinez & Tuesca, 2019). So, with the feeling of being comfortable following the learning process, the interaction of students with learning resources will be better and this will certainly have a direct impact on student learning outcomes. The results of this study are following the results of research conducted by Chania et al., (2017) showing that there is a significant and positive relationship between learning styles and student learning outcomes in biology learning, this is evidenced by rcount (0.089) <rtabel (0, 235), Ha Ho was rejected and accepted. Based on the research results, it shows that there is a significant positive relationship between the three learning style variables on student learning outcomes in biology subjects, thus this hypothesis test supports the research. Research conducted by (Putri et al., 2019) states that there is a significant relationship between learning styles and student mathematics learning outcomes; there is a significant relationship between learning activeness on student mathematics learning outcomes, and there is a significant relationship between learning styles and learning activeness together on student mathematics learning outcomes.

Second, there is a contribution between learning creativity and learning outcomes at SMKN 3 Pariaman. The creativity possessed by children will have a positive impact on the learning process because with creativity students can develop ideas to solve the problems given. Creativity is the ability of students to develop and produce ideas or problem solving given (Henriksen et al., 2020). Creativity is the result of creative thinking, therefore the education system should stimulate logical thinking and reasoning (Sambada, 2012). With the creativity of students will be more active in the learning process, this certainly has an impact on the effectiveness of the learning process. The activeness of students in the learning process will make students explore and build their knowledge, so that students will have longer memories and this will have an impact on student learning outcomes. The results of this study are in line with research conducted by Wahyuni & Kurniawan, (2018) showing that the ability to think creatively affects student learning outcomes with insignificant values and the ability to think creatively affects student learning outcomes by 22.5%. Research conducted by Mayora et al., (2018) shows that there is a significant relationship between student creativity and mathematics learning outcomes of eighth grade students of SMP N 1 X Koto Di Atas, Solok Regency, 2017/2018 academic year. This can be seen from the research results obtained Z0 = 3,225585 and Ztabel = 1.95996398, at the real level alpha = 0.05. So, the existence of creativity will have an impact on student learning outcomes because students will find and build their knowledge.

Third, there is a contribution between exploratory interest and learning outcomes at SMKN 3 Pariaman. The interest in exploration will have an impact on learning outcomes, interest in exploration is the willingness of students to explore the material being learned by students. This will have an impact on the amount of knowledge possessed by students, of course this will have an impact on student learning outcomes. Student interest in social studies subjects with student learning outcomes has a strong relationship (Budiwibowo, 2016). The results of this study are in line with Yeftha et al., (2020) showing that there is a close relationship between interest and learning outcomes. (learning outcomes) and the magnitude of the determinant coefficient given by X to Y is 12.8%. Research conducted by (Sari et al., 2016) shows that there is an influence of interest and motivation on learning achievement in science class eleventh grade students of SMA Negeri 1 Galing Sambas Regency with a determination coefficient value of 0.46, which indicates that 46% of learning achievement Student physics is influenced by interest and motivation to learn, while the remaining 54% is influenced by other variables not included in this study.

Fourth, in this study, there is a contribution between learning styles, learning creativity and exploratory interest together on the learning outcomes of the tenth grade simulation and digital communication students at SMKN 3 Pariaman. Learning outcomes are everything that is obtained by students after carrying out the learning process. Some of the factors that influence learning outcomes are internal (internal) factors and students' external (external) factors. Factors in students include learning styles, creativity, motivation, and interest in learning. With these factors, it will greatly affect the formation of student learning outcomes. The results of this study are following the results of research conducted by Chania et al., (2017) showing that there is a significant and positive relationship between learning styles and student learning outcomes in biology learning, this is evidenced by rcount (0.089) <rtabel (0, 235), Ha Ho was rejected and accepted. Research by Mayora et al., (2018) shows that there is a significant relationship between student creativity and mathematics learning outcomes of eighth grade students of SMP N 1 X Koto, Solok Regency, 2017/2018 academic year. The research of Sari et al., (2016) shows that there is an influence of interest and learning motivation on physics learning achievement in science class eleventh grade students of SMA Negeri 1 Galing Sambas Regency with a determination coefficient value of 0.46, which indicates that 46% of students' physics learning achievement influenced by interest and motivation to learn while the remaining 54% is influenced by other variables not included in this study.

Based on the results of the research conducted, it can be said that there is a contribution between learning styles, learning creativity and exploratory interest in the results of learning simulation and digital communication of tenth grade students at SMKN 3 Pariaman. Therefore, the learning process carried out must be able to suit the learning styles of students which will increase students' creativity and interest in finding and exploring their knowledge.

Conclusion

Based on the results of the analysis of research on the contribution of learning styles, learning creativity and exploratory interest to student learning outcomes at SMKN 3 Pariaman, it can be concluded that learning styles, learning creativity and exploratory interest in student learning outcomes have a significant correlation at the 5% error level. This shows that there is a very strong correlation between learning styles, learning creativity and exploratory interest on student learning outcomes at SMKN 3 Pariaman. Therefore, the learning process carried out must be able to suit the learning styles of students which will increase students' creativity and interest in finding and exploring their knowledge.

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