THE RELATIONSHIP AND INFLUENCE OF *SELF EFFICACY* AND *SELF-REGULATED LEARNING* ON STUDENTS' NUMERICAL ABILITY IN SOLVING SPLDV STORY PROBLEMS

Sinta Maemanah[1], Rukmono Budi Utomo[2], Desty Haswati[3]
[1,2,3]Universitas Muhammadiyah Tangerang, Tangerang, Banten
e-mail: sintamaemanah2@gmail.com

Abstract

This study aims to determine the relationship and influence of self-efficacy and self-regulated learning on students' numerical ability in solving SPLDV story problems. The method used in this study was a quantitative survey with a sample of 44 students who were randomly selected (simple random sampling). The data collection technique uses a test instrument in the form of 5 points of description questions on the SPLDV material to measure students' numerical abilities, and a non-test instrument in the form of a questionnaire to reveal students' self-efficacy and self-regulated learning data. Partial hypothesis testing between self-efficacy variables and numerical ability showed that there was a significant relationship in the fairly strong category with a correlation coefficient of 0.579 and a positive influence with a contribution of 33.6%. For partial hypothesis testing between self-regulated learning variables with numerical ability, it shows that there is a significant relationship in the strong category with a correlation coefficient of 0.668 and a positive influence with a contribution of 44.6%. In addition, simultaneous hypothesis testing for self-efficacy and self-regulated learning variables on numerical ability showed that there was a significant relationship in the strong category with a correlation coefficient of 0.709 and a positive influence with a contribution of 50.3%.

Keywords: self-efficacy, self-regulated learning, numerical ability

INTRODUCTION

Mathematics is a universal science that underlies the development of science and technology and has an important role in developing human abilities or potential. Various activities involving *Science, Technology, Engineering, and Math* (STEM) are needed as a means of solving problems creatively and innovatively in every field of science (Maharani, 2020). In addition, various problems in everyday life cannot be separated from the role of mathematics. Given the importance of the role of mathematics, mathematics is used as a field of science taught in formal and non-formal education units even in family and community environments. Therefore, it is not surprising that mathematics subjects taught in schools have the highest percentage of lesson hours compared to other subjects.

But in reality, mathematics is a subject that most students do not like. For them, maths is seen as a difficult subject to learn. This happens because mathematics lessons are identical to formulas, numbers and require accuracy in calculations. From the results of Ayu et.al analysis (2021), students' difficulties in learning mathematics include difficulty understanding concepts, counting skills, and solving problems. Therefore, it takes an ability that students must have in learning mathematics, one of these abilities is numerical ability.

According to Samekto (1987) numerical ability is a mathematical ability in which the ability of calculation operations such as addition, subtraction, multiplication, division, lift, drawing roots and others as well as the ability to manipulate numbers and number symbols (Khasanah & Widayati, 2018). This ability can support the ability to think quickly, precisely and carefully which greatly supports students' skills in understanding symbols in mathematics (Lestari, 2019). Numerical ability as an internal factor in students can affect students' learning comprehension and mathematical problem solving.

However, there are differences that exist in each student both interests, attitudes, characteristics, motivation and ways of adjustment, so the numerical abilities possessed by students are different. In addition, the closure of schools during the Covid-19 pandemic, formal educational institutions carried out online learning activities which caused several consequences including learning *loss,* So that the learning process is less optimal and there is a decrease in student ability (Amsikan, Nahak, & Mone, 2021). In restoring the decline in students' abilities when schools reopen, it is necessary to monitor and pay attention to the condition of students in learning activities. Student beliefs about students' learning ability *or self-efficacy* in learning activities can affect their mindset and outlook in learning or understanding something before acting.

The level *of self-efficacy* of students can be seen from their ability to manage, perform and solve problems related to learning tasks and have confidence that tasks can be completed well (Imaroh, Umah, & Arsiningsih, 2021). Students who have *low self-efficacy tend to choose certain tasks that match their abilities, but if those tasks are believed to be too difficult they tend to avoid and ignore them* (Mellyzar, Unaida, Muliani, & Novita, 2021).

Self-efficacy is included in students' affective abilities that need to be developed in order to obtain certain results as expected. The ability of students to assess themselves accurately is very important in doing the tasks and questions given, by having self-confidence and confidence in their abilities makes it easier for students to improve other abilities (Jatisunda, 2017). Therefore, in the learning process students must have confidence that they are able to do tasks and questions to improve their abilities so that the expected goals can be achieved properly.

Self-efficacy is not the only factor in improving students' abilities, especially in this case numerical ability. The student's intelligence or abilities can be enhanced in certain ways such as exercise and other activities or brain stimuli. Low numerical ability can be caused by students' lack of awareness of the importance of having numerical skills that can support the ability to solve mathematical problems in everyday life, and students' reluctance to practice problems that can improve their numerical skills (Cahya, Arnyana, & Dantes, 2020).

In addition to students' confidence in doing assignments and questions in improving numerical abilities, it is also necessary to multiply practice questions that contain calculations regularly, so naturally students' abilities will increase. By doing practice questions, students will know better the extent of the material understood and mastered and the level of ability possessed (Juita & Yulhendri, 2019). Therefore, awareness is needed from within students to determine the approach to the learning process through setting, planning and achieving goals in independent learning which can be referred to as *self-regulated learning*.

Self-regulated learning views acquisition as a systematic and controllable process and accepts greater responsibility for the results of its achievement (Paska & Laka, 2020). Students who have *self-regulated* learning will naturally start a hands-on learning effort and create better study habits to strengthen the skills and expertise they want. With the high *self-regulated learning* possessed by students indicates that they can improve other abilities. Along with the learning process, the psychological factors that exist in students to build and improve numerical abilities can be done by the students themselves.

The description above can be understood that students' numerical ability is not determined by a single factor, but is influenced by several other factors, both from outside and within students. Therefore, researchers are interested in conducting research aimed at determining the relationship and influence between *self-efficacy* variables and *self-regulated learning* on students' numerical ability in solving SPLDV story problems.

METHOD

The type of research used is correlational research with quantitative methods that aim to determine the relationship and influence between research variables. This study consists of two independent variables, namely *self-efficacy* variables (X_1) *and self-regulated learning* (X_2), and dependent variables, namely numerical ability (Y). The model was made from the research design in figure 1 below.

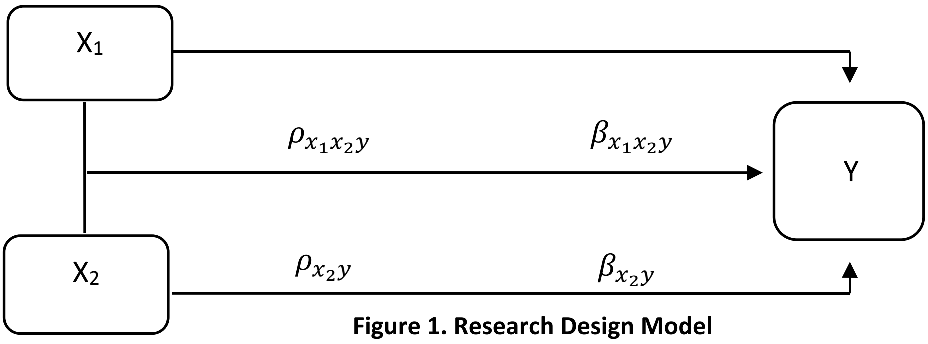

Figure 1. Research Design Model

This research was carried out in one of the schools in the city of Tangerang, namely SMPIT INDRA BANGSA in the 2022/2023 Academic Year. The sample used was 44 grade VIII students who were randomly selected (*simple random sampling).* The data collection techniques used are test instruments in the form of 5 points of description questions on SPLDV material to measure students' numerical abilities, and non-test instruments in the form of questionnaires are used to measure the level *of self-efficacy and self-regulated learning* with a total of 35 statements consisting of 18 positive statements and 17 negative statements.

The data analysis techniques of this research are descriptive statistics and inferential statistics. Descriptive statistical analysis techniques are used to analyze data by describing or describing the data that has been collected as it is without intending to make generalized conclusions or generalizations. While inferential analysis techniques are used in conducting hypothesis testing. The data obtained were analyzed using prerequisite test analysis, namely normality test, linearity test, multicollinearity test and heterokedasticity test. Then proceed with hypothesis testing, namely correlation analysis and linear regression simply or multiplely. To determine the level of significance of the influence between the independent variable on the dependent variable partially and simultaneously using the t test and F test. In addition, to find out how much percentage of influence is given using the coefficient of determination test.

RESULTS AND DISCUSSION

Based on the results of the study, data obtained from numerical ability test instrument data (Y) as well as non-test instruments, self-efficacy questionnaire (X_1) and *self-regulated learning questionnaire (X_2)*. The description of the data is presented in table 1 below.

Table 1. Descriptive Statistics of Research Results Data

Statistics	Numerical Ability (Y)	*Self Efficacy* (X1)	*Self Regulated Learning* (X2)
Mean	26,68	63,42	65,29
Median	27,00	65,14	65,13
Mode	16,00	65,14	63,42
Maximum	60,00	86,28	84,57
Minimum	4,00	35,42	40,00
Range	56,00	50,86	44,57
Standard Deviation	13,71	12,53	11,33
Variance	188,08	157,09	128,40

The results of the descriptive analysis conducted on the score data obtained regarding the numerical ability of students from the 5 SPLDV story question instrument items can be classified into 5 category levels based on the ideal mean = $\frac{1}{2}$ (Highest Score + Lowest Score) and ideal standard deviation = $\frac{1}{6}$ (Highest Score - Lowest Score). Then the ideal mean and ideal standard deviation are obtained:

Ideal mean = $\frac{1}{2}$ (60,00 + 4,00) = 32,00

Ideal standard deviation = $\frac{1}{6}$ (60,00 – 4,00) = 9,33.

Table 2. Categorization of Numerical Ability Tendencies

No.	Score Interval	Category	Frequency	Percentage (%)
1.	X ≥ 45,99	Very High	5	11,36
2.	36.66 ≤ X < 45.99	Tall	3	6,82
3.	27,33 ≤ X < 36,66	Enough	14	31,82
4.	18,00 ≤ X < 27,33	Low	10	22,73
5.	X ≤ 18,00	Very Low	12	27,27

The results data obtained regarding *student self-efficacy* consisting of 35 instrument items can be classified into 5 category levels based on the ideal mean and ideal standard deviation obtained: the Ideal mean = $\frac{1}{2}$ (86,28 + 35,42) = 60,85 and ideal standard deviation = $\frac{1}{6}$ (86,28 – 35,42) = 8,47.

Table 3. Categorization of *Self Efficacy Tendencies*

No.	Score Interval	Category	Frequency	Percentage (%)
1.	x ≥ 73,55	Very High	10	22,73
2.	65.08 ≤ x < 73.55	Tall	13	29,55
3.	56,60 ≤ x < 65,08	Enough	11	25,00
4.	48.14 ≤ x < 56.60	Low	5	11,36
5.	x ≤ 48,14	Very Low	5	11,36

While the self-regulated learning *scale score data* which is classified into 5 category levels based on the ideal mean and ideal standard deviation obtained are: the ideal mean = $\frac{1}{2}$ (84,57 + 40,00) = 62,28 and ideal standard deviation obtained = $\frac{1}{6}$ (84,57 – 40,00) = 7,42.

Table 4. Categorization of *Self Regulated Learning Tendencies*

No.	Score Interval	Category	Frequency	Percentage (%)
1.	X ≥ 73,41	Very High	11	25,00
2.	65,99 ≤ X < 73,41	Tall	10	22,72
3.	58,57 ≤ X < 65,99	Enough	12	27,27
4.	51,15 ≤ X < 58,57	Low	6	13,64
5.	X ≤ 51,15	Very Low	5	11,36

After the data is analyzed statistically descriptively, then the next is inferential statistical analysis which aims to test the research hypothesis. Before testing the research hypothesis, the researcher first tests the prerequisites for data analysis and determines the linear regression equation model.

Data normality tests are performed to determine whether the residual values of the regression model have a normal or abnormal distribution of distribution data. In this study, the normality test used was the *Kolmogorov-Smirnov* test. The hypotheses in the normality test are:

H_0 : Data is not normally distributed

H_1 : Data is normally distributed

Hypothesis testing to determine the normality of the data i.e., if the result is *Asymp.Sig.(2-tailed)* > 0.05 then H0 is rejected and H1 is accepted so that the data is declared normal. Conversely if the result is *Asymp.Sig.(2-tailed)* < 0.05 then H0 is accepted and H1 is rejected so that the data distribution is declared abnormal. Here are the normality test results with the help of the SPSS 25 program.

Table 5. Data Normality Test

Test Type	A	*Asymp. Sig (2-tailed)*	Decision
Kolmogorov-Smirnov	0,05	0,106	H0 rejected and H1 accepted

From the table above, it is obtained that the significance value of the *Kolmogorov-Smirnov One-Sample test* from the residual data can be concluded that the data are normally distributed with a significance value of 0.106 > 0.05.

The linearity test is performed to determine whether the relationship between the independent variable and the bound variable lies in a straight line (linear) or not. The decision-making criteria for determining data linearity are, if the value of *Sig.* > 0.05 (α = 5%) then there is a linear relationship between the two variables. Conversely, if the value of *Sig.* < 0.05 (α =

5%) there is no linear relationship between the two variables. The following are the results of the linearity test of *self-efficacy (X_1) and* self-regulated learning *(*X_2) with numerical ability (Y).

Table 6. Data Linearity Test

Hypothesis	α	*Sig.* (*Deviation from Linearity*)	Decision
X_1 to Y	0,05	0,731	Linear
X_2 to Y	0,05	0,997	Linear

Based on the table above, it can be seen that the *Sig*. value between the numerical ability variable and the *self-efficacy* variable is 0.731 > 0.05. In addition, the *Sig*. value between numerical ability variables and *self-regulated learning* is 0.997 > 0.05. This shows that the relationship between the independent variable and the dependent variable lies on a significantly linear line.

The multicollinearity test is used to determine the presence or absence of multicollinearity symptoms that indicate a strong correlation or relationship between independent variables in multiple regression models. The decision-making criteria in the multicollinearity test are, if the *Tolerance* value > 0.01 and *the VIF* value ≤ 10, then the data is not multicollinearity occurs. Conversely, if the *Tolerance* value ≤ 0.01 and *the VIF value* > 10, then the data occurs multicollinearity. The following are the results of the multicollinearity test between independent variables.

Table 7. Data Multicollinearity Test

Independent Variable	*Tolerance*	*BRIGHT*	Decision
Self Efficacy	0,668	1,497	No multicollinearity occurs
Self Regulated Learning	0,668	1,497	No multicollinearity occurs

Based on the table above, it can be seen that the independent variables *of self-efficacy* (X_1) *and self-regulated learning* (X_2) with numerical ability (Y) as the dependent variable show *a Tolerance* value of 0.668 > 0.01 and a *VIF* value of 1.497 < 10. So it can be concluded that there is no multicollinearity between independent variables.

Furthermore, the heteroscedasticity test is used to test whether in the regression model there are differences in *residual variance* (*error* data) at all levels to be tested. One method to detect a regression model whether it has heteroscedasticity problems or not is to perform the Glejser Test. The decision-making criteria in the heteroscedasticity test are, if the significance value (Sig.) > 0.05 (α = 5%) then there is no heteroscedasticity symptoms in the regression model. Conversely, if the significance value (Sig.) < 0.05 (α = 5%) then heteroscedasticity symptoms occur in the regression model. The following are the results of the heteroscedasticity test by conducting the Glejser Test using the help of the SPSS 25 program.

Table 8. Data Heterokedasticity Test

Independent Variable	**A**	***Itself.***	**Decision**
Self Efficacy	0,05	0,324	No heterokedasticity occurs
Self Regulated Learning	0,05	0,432	No heterokedasticity occurs

Based on the table above, it can be seen that the significant value of self *efficacy is 0.324 > 0.05 and the significant value of* self regulated learning *is 0.432 > 0.05.* So it can be concluded that there are no symptoms of heterokedasticity in the regression model or in other words all independent variables have the same distribution of variants.

The linear regression equation model used in this study is multiple linear regression analysis. This analysis aims to estimate / predict the relationship and influence of the value of the dependent variable, namely numerical ability (Y) with the values of the independent variables, namely *self efficacy* (X1) and *self regulated learning* (X2). The following are the results of data processing using the help of the SPSS program version 25.

Table 9. Multiple Linear Regression Test Results

Constant (*a*)	**Regression Coefficient (*b1*)**	**Regression Coefficient (*b2*)**
-33,043	0,319	0,605

Then the multiple linear regression equation that can be compiled based on the table above is: .$Y = -33{,}043 + 0{,}319X_1 + 0{,}605X_2$

For multiple correlation coefficient analysis, it is used to measure whether or not the relationship between *self-efficacy* (X_1) and *self-regulated learning* *(*X_2) variables with numerical ability variables (Y) is used. The following are the results of the data processing test of multiple correlation coefficient analysis using the help of the SPSS program version 25.

Table 10. Multiple Correlation Coefficient Test Results

Independent Variability	**Party *Sig.* (α)**	***Sig. FChange***	**R value**
Self Efficacy (X1) dan *Self Regulated Learning* (X2)	0,05	0,000	0,709

Based on the table above, it is known that the *value of Sig. FChange* is 0.000 where the value of 0.000 < 0.05 so it can be said that there is a correlation or there is a relationship between the variables *of self efficacy* and *self regulated learning* with the variable of numerical ability. The value of the correlation coefficient (R value) of 0.709 states that the degree of relationship between self-efficacy *and* self-regulated learning *to numerical ability variables is in a strong correlation with the direction of a positive relationship.*

Hypothesis Testing

Determine whether there is a relationship and influence of *self-efficacy* (X1) on numerical ability

The submission of hypothesis 1 proposed in this study can be formulated into the following equation.

$H_0 : \rho x_1 y = 0$ (There was no significant association *of self-efficacy* with students' numerical ability)

$H_1 : \rho x_1 y \neq 0$ (There was a significant relationship *of self-efficacy* with students' numerical ability)

On the basis of decision making that: If the value of *Sig.* (*2-tailed*) < 0.05 then H0 is rejected and H1 is accepted with the meaning that there is a partially significant relationship. Conversely, if the value of *Sig.* (*2-tailed*) > 0.05 then H0 is accepted and H1 is rejected with the meaning that there is no partially significant relationship.

Correlations

		X1	Y
X1	Pearson Correlation	1	.579**
	Sig. (2-tailed)		.000
	N	44	44
Y	Pearson Correlation	.579**	1
	Sig. (2-tailed)	.000	
	N	44	44

**. Correlation is significant at the 0.01 level (2-tailed).

To find out how big the correlation value and significance value can be seen in the *output* of the *Correlation table*. The correlation value obtained is 0.579 and the value of *Sig.* (*2-tailed*) = 0.000 where 0.000 < 0.005. It can be concluded that H0 is rejected and H1 is accepted, which means that there is a significant relationship between *self-efficacy* and numerical ability.

Then the t test is used to determine whether partially/individually the independent variable has an effect on the dependent variable. The following are the results of partial significance values in the t test obtained from the hypothesis in this study.

$H_0 : \beta x_1 y = 0$ (There was no significant effect of *self-efficacy* on students' numerical ability)

$H_1 : \beta x_1 y \neq 0$ (There is a significant effect of *self-efficacy* on students' numerical ability)

On the basis of decision making: If the tcount is > ttable and the value of *Sig.* < 0.05 then H0 is rejected and H1 is accepted with the meaning that there is a partially significant effect. Conversely, if tcalculate < ttable and the value of *Sig*. > 0.05, then H0 is accepted and H1 is rejected with the meaning that there is no partially significant effect.

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-13.525	8.893		-1.521	.136
	X1	.634	.138	.579	4.607	.000

a. Dependent Variable: Y

To find out how big the calculated value and significance value can be seen in the *output* of the *Coefficients* table. So we get a calculation of 4.607 and a *Sig*. value of 0.00. While the value of ttabel can be known by using the formula ttabel = (α/2; n-k-1), so that the value of ttable = (0.05/2; 44-2-1) = (0.025; 41) = 2.020.

From the results of the calculated and ttable values and the significance values above, it was decided that the calculated value = 4.607 > ttable = 2.020 and the Sig. = 0.000 < Sig. α = 0.05. So it can be concluded that H0 is rejected and H1 is accepted, which means that there is a significant influence between *self-efficacy* and numerical ability. With an influence percentage of 33.6% which can be seen from R *Square* in the *following Model Summary* table

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.579[a]	.336	.320	11.31034

a. Predictors: (Constant), X1

Determine whether there is a relationship and influence of *Self Regulated Learning* (X2) on numerical ability

The submission of hypothesis 2 proposed in this study can be formulated into the following equation.

H_0 : $\rho x_2y = 0$ (There was no significant relationship *between self-regulated learning* and students' numerical ability)

H_1 : $\rho x_2y \neq 0$ (There is a significant relationship *between self-regulated learning* and students' numerical ability)

On the basis of decision making that: If the value of *Sig.* (*2-tailed*) < 0.05 then H0 is rejected and H1 is accepted with the meaning that there is a partially significant relationship. Conversely, if the value of *Sig.* (*2-tailed*) > 0.05 then H0 is accepted and H1 is rejected with the meaning that there is no partially significant relationship.

Correlations

		X2	Y
X2	Pearson Correlation	1	.668**
	Sig. (2-tailed)		.000
	N	44	44
Y	Pearson Correlation	.668**	1
	Sig. (2-tailed)	.000	
	N	44	44

**. Correlation is significant at the 0.01 level (2-tailed).

To find out how big the correlation value and significance value can be seen in the *output* of the *Correlation table*. The correlation value obtained is 0.668 and the value of *Sig.* (*2-tailed*) = 0.000 where 0.000 < 0.005. It can be concluded that H0 is rejected and H1 is accepted, which means that there is a significant relationship between *self-regulated learning* and numerical ability.

Then the t test is used to determine whether partially/individually the independent variable has an effect on the dependent variable. The following are the results of partial significance values in the t test obtained from the hypothesis in this study.

H_0 : $\beta x_1y = 0$ (There was no significant effect of *self-regulated learning* on students' numerical ability)

H_1 : $\beta x_1y \neq 0$ (There is a significant effect of *self-regulated learning* on students' numerical ability)

On the basis of decision making: If the $t_{calculate}$ is > t_{table} and the value of *Sig.* < 0.05 then H0 is rejected and H1 is accepted with the meaning that there is a partially significant effect. Conversely, if t_{table} < t_{table} and the value of *Sig.* > 0.05, then H0 is accepted and H1 is rejected with the meaning that there is no partially significant effect*.

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-26,091	9.209		-2.833	.007
	X2	.808	.139	.668	5.814	.000

a. Dependent Variable: Y

To find out how big the calculated value and significance value can be seen in the *output* of the *Coefficients* table. So it gets a calculation of 5.814 and a *Sig*. value of 0.00. While the value of t_{tabel} can be known by using the formula t_{tabel} = (α/2; n-k-1), so the value of t_{tabel} = (0.05/2; 44-2-1) = (0.025; 41) = 2.020.

From the results of the calculated and $t_{calculate}$ values and the significance values above, it was decided that the calculated value = 5.814 > t_{table} = 2.020 and the Sig. = 0.000 < Sig. α = 0.05. So it can be concluded that H0 is rejected and H1 is accepted, which means that there is a significant influence between *self-regulated learning* on numerical ability. With an influence percentage of 33.6% which can be seen from R *Square* in the *following Model Summary* table.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.668[a]	.446	.433	10.32899

a. Predictors: (Constant), X1

Determine whether there is a relationship and influence of *Self Efficacy* (X1) and Self Regulated Learning *(X2) on Numerical Ability*

The proposal of hypothesis 3 proposed in this study can be formulated into the following equation.

$H_0 : \rho x_1 x_2 y = 0$ (There was no significant relationship between *self-efficacy* and *self-regulated learning* with students' numerical ability)

$H_1 : \rho x_1 x_2 y \neq 0$ (There is a significant relationship between *self-efficacy and* self-regulated learning *with students' numerical ability*)

On the basis of decision making that: If the value of *Sig.* (*2-tailed*) < 0.05 then H0 is rejected and H1 is accepted with the meaning that there is a significant relationship simultaneously. Conversely, if the value of *Sig.* (*2-tailed*) > 0.05 then H0 is accepted and H1 is rejected meaning that there is no simultaneously significant relationship.

Correlations

		Self Efficacy (X1)	*Self Regulated* Learning (X2)	Kemampuan Numerik (Y)
Self Efficacy (X1)	Pearson Correlation	1	.576**	.579**
	Sig. (2-tailed)		.000	.000
	N	44	44	44
Self Regulated Learning (X2)	Pearson Correlation	.576**	1	.668**
	Sig. (2-tailed)	.000		.000
	N	44	44	44
Kemampuan Numerik (Y)	Pearson Correlation	.579**	.668**	1
	Sig. (2-tailed)	.000	.000	
	N	44	44	44

**. Correlation is significant at the 0.01 level (2-tailed).

To find out the significance value can be seen in the *output* of the *Correlation table*. The significance value obtained is 0.000 < 0.005. It can be concluded that H0 is rejected and H1 is accepted, which means that there is a significant relationship between *self-efficacy and* self-regulated learning *with numerical ability.*

Then the F test is used to determine whether simultaneously the independent variable has an effect on the dependent variable. The following are the results of partial significance values in the t test obtained from the hypothesis in this study.

H_0 : $\beta x_1\ x_2 y = 0$ (There was no significant effect of *self-efficacy* and *self-regulated learning* on students' numerical ability)

H_1 : $\beta x_1\ x_2 y \neq 0$ (There is a significant effect of *self-efficacy* and *self-regulated learning* on students' numerical ability)

On the basis of decision making: If $F_{calculate} > F_{table}$ and the value of *Sig.* < 0.05 then H0 is rejected and H1 is accepted with the meaning that there is a simultaneous significant effect. Conversely, if $F_{calculate} < F_{table}$ and the value of *Sig. > 0.05, then H0 is accepted and H1 is rejected with the meaning that there is no simultaneous significant effect*.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4065.116	2	2032.558	20.718	.000[b]
	Residual	4022.429	41	98.108		
	Total	8087.545	43			

To find out how big the $F_{calculate}$ value and significance value can be seen in the *ANOVA* table *output*. So we get a $F_{calculate}$ of 20.718 and a Sig. value of 0.00. While the value of F_{table} can be known by using the formula F_{table} = (k-1 ; n-k), so that the value of F_{table} = (3-1 ; 44-3) = (2 ; 41) = 3.23.

table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.709[a]	.503	.478	9.90495	.503	20.718	2	41	.000

a. Predictors: (Constant), Self Efficacy, Self Regulated Learning

CONCLUSION

Based on data analysis and discussion of research results regarding the relationship and influence of *self-efficacy* and *self-regulated learning* on numerical ability, the following conclusions can be drawn:

1. There is a relationship between *self-efficacy* and students' numerical ability with a correlation coefficient value of 0.579 indicating a positive relationship direction with a fairly strong correlation level with the regression model obtained, namely $\hat{Y}$= -13.525 + 0.634X1. In addition, partial significance testing showed that *self-efficacy* had a significant influence on students' numerical abilities with *a Sig.* = 0.037 value and a calculated value of 2.162.
2. There is a relationship between *self-regulated learning and* students' numerical ability with a correlation coefficient value of 0.668 indicating a positive relationship direction and a strong correlation level with the regression model obtained, namely $\hat{Y}$= -26.091 + 0.808X2. In addition, partial significance testing showed that *self-regulated learning* had a significant influence on students' numerical abilities with a value of *Sig.* = 0.001 and a calculated value of 3.710.
3. There is a relationship between *self-efficacy and self-regulated learning* together with numerical ability with a correlation coefficient value of 0.709 indicating a positive relationship direction with a strong correlation level and the regression model obtained, namely. In addition, simultaneous significance testing showed that $\hat{Y} = -33{,}043 + 0{,}319X_1 + 0{,}605X_2$ *self-efficacy* and *self-regulated learning* had a significant influence on

the numerical ability of students with *a Sig.* = 0.000 $F_{calculate}$ value of 20.718. The magnitude of the influence of *self-efficacy* and *self-regulated learning* on students' numerical abilities can be seen from the value of the coefficient of determination which obtained a value of 50.3% while the remaining 49.7% was caused by other factors outside the variables tested in this study.

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