

**THE INFLUENCE OF THE USE OF GADGETS AS A LEARNING
RESOURCE AND INTEREST IN LEARNING ON THE LEARNING
OUTCOMES OF GRADE X STUDENTS IN ECONOMICS
SUBJECTS AT MUHAMMADIYAH 11 HIGH SCHOOL IN EAST
JAKARTA**

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Abstract

This study aims to determine the effect of using gadgets as learning resources and interest in learning on the learning outcomes of grade X students in economics subjects at SMA Muhammadiyah 11 East Jakarta. This study uses a quantitative approach and survey method. The number of samples in this study was 104 students. The data used were primary and secondary data. Primary data was obtained using a closed questionnaire while secondary data was obtained from the Summative Assessment End of Even Semester. The data analysis used in this research is Path Analysis with the help of SPSS version 25. The results of the first hypothesis research show that the use of gadgets as a learning resource has a direct positive effect on student learning outcomes with a magnitude of 0.439. In the second hypothesis, learning interest has a direct positive effect on student learning outcomes with a magnitude of 0.549. Furthermore, the third hypothesis is accepted, which means that the use of gadgets as a learning resource has a direct positive effect on learning interest with a magnitude of 0.846. And the fourth hypothesis is accepted, meaning that there is an indirect effect of using gadgets as learning resources on student learning outcomes through learning interest of 0.464 with a p value <0.05, which means that learning interest has a role in mediating the use of gadgets as learning resources on student learning outcomes. Hence, the desire to learn has a dual impact on students' educational achievements.

Keywords: *Gadgets, Learning Outcomes, Learning Interest, Smartphones, Learning Resources*

1. INTRODUCTION

Schools are formal educational institutions that are places for teaching and learning activities and gain knowledge that will be useful for life, and schools are also used as a tool to achieve educational goals. Educational goals are said to be successful if the teaching and learning process carried out by teachers and students can be carried out effectively and efficiently so that students benefit and provide better changes for students. Schools as one of the educational institutions use learning outcomes as a measure of success in a learning process (Rahman, 2022). According to Dimiyati & Mudjiono (2015) learning outcomes are the level of success achieved by students after participating in a learning activity, where the level of success is marked by a value scale in the form of letters or words or symbols. Student learning outcomes can be said to be successful if they meet a criterion. These criteria are referred to as the Minimum Completeness Criteria (KKM). The following are the learning outcomes of class X students in economics subjects at SMA Muhammadiyah 11.

Table 1. Summative Assessment End of Even Semester

No	Class	Number of Students	KKM Student Completion	Incomplete Students
1	X A	33	32	1
2	X B	37	28	9
3	X C	36	19	17
4	X D	34	16	18
Total		140	95	45

Source: Economics teacher

The decline in learning outcomes achieved by students is of course there are factors that influence it. According to Slameto (2010), the factors that affect student learning outcomes can be divided into two, namely internal factors and external factors. Internal factors are factors that come from within the student, including physical factors (health and physical limitations), psychological factors (intelligence, attention, interest, talent, motivation, maturity, and readiness), and fatigue factors. Meanwhile, external factors include family, school, and community factors. In addition, according to Kristiana (2021), gadget use is a factor that affects student learning outcomes. According to Derry & Agency (2014), a gadget is an electronic device or instrument that has practical purposes and functions, especially to help human work. One example of a gadget is a smartphone. According to Maknuni (2020), a smartphone is a device that can be used as a teaching aid or as a means of providing information to children or adults. According to Rahma & Sandika (2022), currently the important role of smartphones can be equated with the use of printed books in obtaining knowledge, because their use is easy, and can be accessed at any time by students. Smartphone users have also increased every year. Proven from the data (Statista, 2023).

Number of smartphone users in Indonesia from 2018 to 2028
(in millions)

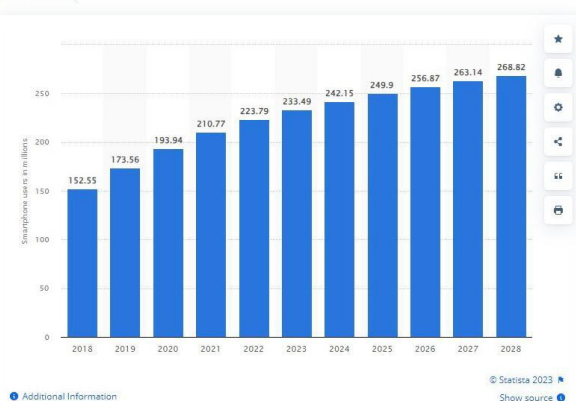


Figure 1. Number of Smartphone users in Indonesia from 2018 to 2028

Source: (Statista, 2023)

From these data in 2018 smartphone users reached 152.55 million, then increased in 2019 smartphone users reached 173.56 million. Likewise in 2020, 2021 & 2022 the number of smartphone users increased to 193.94 million, 210.77 million, and 223.79 million. There is also research conducted by the Cambridge International organization in

2018 followed by 502 students and 637 teachers in Indonesia. The study proved that around 67% of students in Indonesia use smartphones while learning in class and 81% of students use smartphones to do homework (Cambridge Assessment International Education, 2018).

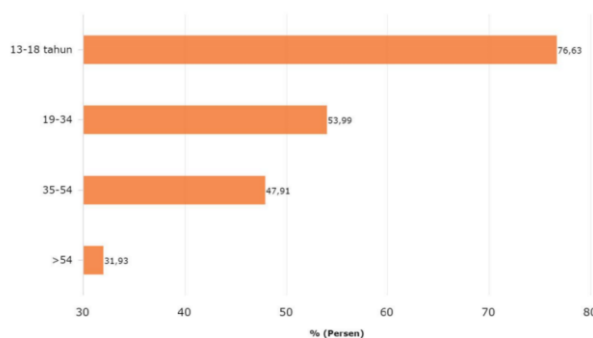


Figure 2. Internet use is on the rise among teenagers

Source: Association of Indonesian Internet Service Providers (APJII) (2022)

Smartphone users are inseparable from the internet network because most of the applications and features in smartphones use the internet network (Lestari & Effendi, 2021). Based on a survey by the Indonesian Internet Service Providers Association (APJII), it is known that most internet users come from the ages of 13-18, namely 76.63%.

With smartphones connected to the internet, students can access information related to economic subjects, access about up to date economic developments. Students can also use it to download eBooks from websites and applications that provide eBooks, download articles, e-modules so that the learning resources that students have do not only come from books. In accordance with the opinion of Oetomo (2002) "internet connections offer more up to date information availability and through the education web students can access eBooks as additional references for learning". Sukarno & Hardinto (2018), in their research on the use of gadgets, said that students' learning resources do not only come from books, but with the internet access facilities contained in gadgets, students can take advantage of getting eBooks or information about the latest economic developments so that students' knowledge can be broader. In line with the opinion of Arifin (2015), technological developments can be utilized as well as possible, thus students can not only learn limited to handbooks, but they can learn by utilizing the internet network to get eBooks for free to support the learning process ". The ease of accessing information, eBooks, articles, e-modules if utilized by students in learning at home and the learning process, can help students understand economic learning materials, help students complete assignments given by teachers, add insight and knowledge and can also improve their learning outcomes.

Then, the situation that supports the use of gadgets in the environment of SMA Muhammadiyah 11 East Jakarta is the Wi-Fi connection provided by the school to make it easier for students to get the internet network. The results of observations made by researchers at SMA Muhammadiyah 11 East Jakarta. Gadgets in the form of smartphones are used by students. One of the teacher's learning contracts with students is that students are not allowed to use smartphones during the learning process unless the teacher allows

it. When the teacher allows students to open smartphones to help complete group discussion tasks. Most students utilize their smartphones to help complete group discussion assignments but some students misuse their smartphones for other things, namely playing social media and games. this if it continues to occur can be an obstacle to student productivity and learning effectiveness. For students who misuse smartphones, the teacher gives a warning and confiscates the student's smartphone until the economics lesson is over.

Researchers also examine one of the internal factors that influence learning outcomes, namely learning interest. According to Nurasia & Gustiani (2021), interest can be interpreted as an encouragement from within students to learn based on feelings of like or pleasure, interest, involvement and seriousness without coercion in achieving a learning goal. A different opinion was conveyed by Saleh & Malinta (2020), according to him interest is an involuntary concentration of attention that is born through participation in an activity because interest is special without coercion from others. Another opinion was conveyed by Masyasaroh (2016), according to him, interest in learning is one of the psychological factors that help and encourage students in providing stimulus to their learning activities to achieve the goals to be achieved, namely good learning outcomes. Factors from outside the student's interest in learning are how the teacher teaches. The role of the teacher is very important to foster students' interest in learning, one of which is by teaching in a fun way and providing constructive motivation (Riamin, 2016). Thus, students who are interested in the subject, the learning process, and the teacher who teaches it have an attitude of pleasure and interest in the lesson, pay great attention, are actively involved in the learning process and seem encouraged to continue to study hard so that the learning outcomes obtained are maximized. In contrast to students whose attitude is only to receive lessons, they are only moved to want to learn but it is difficult to be able to continue to learn seriously, so the learning outcomes obtained are certainly not optimal (Azizah, 2017).

Based on observations made by researchers in class X SMA Muhammadiyah 11 East Jakarta, when the teacher reviews the material some students pay attention to the teacher's explanation, take notes on the teacher's explanation and are actively involved when the teacher gives questions to discuss together but there are also students who chat with their friends, play smartphones and there are also students who work on other subjects during economics lessons. So that when the teacher asks questions to these students, students ask for help from their friends so they can answer the teacher's questions but there are also students who cannot answer the teacher's questions. Even though if students can answer the teacher's questions or vice versa students ask the teacher, the teacher gives additional grades.

Based on the data presented, the researcher can conclude that there are still students who misuse smartphones, there is still a lack of interest in learning and there are still students who get scores below the KKM. If students use their smartphones for learning purposes, not only will students' insight and knowledge increase but it can also increase students' interest in learning and their learning outcomes. Conversely, if students cannot control the use of smartphones as entertainment, for example used to play social media, games, these habits certainly hinder their interest in learning and also affect their learning outcomes. Therefore, the role of teachers and parents is very important in supervising and

limiting the use of student smartphones. As well as awareness within students to manage time and control themselves in using smartphones as entertainment.

Research regarding the use of gadgets as a learning resource and learning interest on learning outcomes has been conducted by several previous researchers. The results of Rosiyanti & Muthmainnah's research (2018) found that there was an influence and significant use of gadgets as a learning resource on Basic Mathematics learning outcomes. Furthermore, the results of Apriani's research (2019) found that there was a significant effect of student interest in learning on English learning outcomes at SMP Negeri 1 Cikurur, Lebak Region. However, the results of Amalia's research (2021) found that learning interest did not significantly affect learning outcomes in the X social studies class economics subject at SMA Negeri 1 Pekanbaru. Furthermore, the results of Bakar's research (2020) found that there was no significant positive effect between the use of gadgets on the learning interest of fifth grade students of SD Inpres Tamalanrea. The results of Sari's research (2018) found that there was no significant positive effect between the use of gadgets on the learning outcomes of fifth grade students of MI Thoriqotussa'adah Pujon Malang Regency ". The difference in the results of this previous study shows the existence of a research gap in this study. The difference between this research and previous research is that Muhammadiyah 11 East Jakarta High School is one of the schools that has implemented an independent curriculum and the data analysis used is path analysis.

Based on the background described above, the researcher is interested in conducting a study entitled "The Effect of Using Gadgets as a Learning Resource and Learning Interest on the Learning Outcomes of Grade X Students in Economic Subjects at SMA Muhammadiyah 11 East Jakarta".

2. LITERATURE REVIEW

2.1. Learning Outcomes

According to Dimyati and Mujiono (2015) learning outcomes are the level of success achieved by students after participating in a learning activity, where the level of success is marked by a value scale in the form of letters or words or symbols. Meanwhile, Mirdanda (2018) states that learning outcomes are the abilities possessed by students after obtaining their learning experience. These abilities include cognitive, affective, and psychomotor aspects. In this study, indicators of learning outcomes are seen from the cognitive domain only which includes student learning outcomes in the form of Summative Assessment End of Even Semester

2.2. Gadget Usage

The word use comes from the word *guna* which gets the affix peng- and the suffix-an which means using (tools), utilizing, doing something without using violence (Rasdianti, 2020). According to Salim & Salim (2002) the meaning of the word use is the process of using something. Gadgets in a general sense are considered electronic devices that have certain functions on each device (Syifa et al., 2019). Examples: computers, smartphones, games, and others. According to Rohmah et al.(2017), gadgets are special electronic devices that are unique compared to other electronic devices. The uniqueness of gadgets is that they always bring up new technologies that are considered to facilitate

their users. This uniqueness makes users feel happy and interested in owning and using gadgets.

2.3. Learning Resources

According to Seels & Richey (1994) learning resources are all sources of support for learning activities, including support systems and learning materials and environments. According to Rosiyanti & Muthmainnah (2018), the classification of learning resources consists of tools, people and the environment. People, the form of learning resources is teaching staff. Environment, forms of learning resources are libraries, laboratories, and others. In this study, researchers used the classification of learning resources as a tool, namely gadgets in the form of smartphones.

2.4. Smartphone

Maknuni (2020), a smartphone is a tool that can be used as a teaching aid or as a means of providing information to children or adults. According to Shofiah (2020), smartphones are electronic devices whose development is quite rapid in modern times like today, in the world of work smartphones have begun to be used to help human work, while in the world of education smartphones have also begun to be used as media or learning resources. This is due to the ease and practicality of using this electronic device.

2.5. Learning Interest

According to Nurasia & Gustiani (2021), interest is an encouragement from within students to learn based on feelings of like or pleasure, interest, involvement and seriousness without coercion in achieving a learning goal. Meanwhile, according to Hendriana et al. (2017) interest in learning is a person's full involvement with all his thoughts and attention to gain knowledge and achieve an understanding of the scientific knowledge he demands.

3. RESEARCH METHODS

This study uses a quantitative approach and survey method. researchers choose survey research so that it is easy to get data directly in the field so that it can be processed and analyzed. Secondary data and primary data were used in this study. Primary data is used to measure the variables of gadget use as a learning resource (X1) and learning interest (X2) obtained through a questionnaire in the form of a google form. The scale or alternative answer used in the questionnaire is a Likert scale. Furthermore, secondary data is used to measure the learning outcome variable (Y) which comes from the Summative Assessment End of Even Semester. The population in this study were grade X students at SMA Muhammadiyah 11 East Jakarta with a total of 140 consisting of 4 classes. In sampling the researchers used proportional random sampling technique which is a balanced sampling technique. The sample in this study was determined using the Slovin formula with an alpha of 5%. The data analysis used is path analysis with the help of SPSS version 25. The tests carried out consist of Validity Test, Reliability Test, Classical Assumption Test consisting of Normality Test, Significance Test and Linearity,

Hypothesis Test stages of Correlation Coefficient Significance Test, Path Coefficient Significance Test, Influence Analysis and Sobel Test.

4. RESULTS AND DISCUSSION

4.1. Research Results

4.1.1. Validity Test

Table 2. Instrument Validity Test Results Gadgets as a Learning Source (X1)

No.	R _{hitung}	R _{tabel}	Description
1	0.558	0.361	Valid
2	0.820	0.361	Valid
3	0.768	0.361	Valid
4	0.695	0.361	Valid
5	0.426	0.361	Valid
6	0.781	0.361	Valid
7	0.550	0.361	Valid
8	0.496	0.361	Valid
9	0.387	0.361	Valid
10	0.673	0.361	Valid
11	0.795	0.361	Valid
12	0.379	0.361	Valid

Source: SPSS Data Processing Results

All statement items for the construct of using gadgets as learning resources have a value of $r_{count} > r_{table}$ of 0.361 so that all statement items are declared valid.

Table 3. Validity Test Results of Learning Interest Instrument (X2)

No.	R _{hitung}	R _{tabel}	Description
1	0.652	0.361	Valid
2	0.528	0.361	Valid
3	0.553	0.361	Valid
4	0.457	0.361	Valid
5	0.553	0.361	Valid
6	0.505	0.361	Valid
7	0.668	0.361	Valid
8	0.448	0.361	Valid
9	0.410	0.361	Valid
10	0.620	0.361	Valid
11	0.482	0.361	Valid
12	0.452	0.361	Valid

Source: SPSS Data Processing Results

All statement items for the learning interest construct have a $r_{count} > r_{table}$ value of 0.361 so that all statement items are declared valid.

4.1.2. Reliability Test

Table 4. Cronbach Alpha Reliability Test Results

Variable	Cronbach Alpha
Use of Gadgets as Learning Resources	0.857
Learning Interest	0.742

Source: SPSS Data Processing Results

The Cronbach Alpha value of the two constructs has a value greater than 0.60, namely for the construct of using gadgets as a learning resource of 0.857 and learning interest of 0.742 so that the overall construct can be declared reliable or has a very high level of reliability.

4.1.3. Classical Assumption Test

Table 5. Kolmogorov Smirnov Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		104
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.72112841
Most Extreme Differences	Absolute	.071
	Positive	.069
	Negative	-.071
Test Statistic		.071
Asymptotic Significance (2-tailed)		.200 ^{c,d}

Source: SPSS Data Processing Results

From the results of the Normality Test above, the p-value is 0.200, which means it is greater than 0.05, so the data is said to be normally distributed and can represent the population.

Table 6. Linearity Test Results X1 to Y

ANOVA Table						
		Sum of Squares	df	Mean Square	F	Sig.
*Penggunaan Gadget Sebagai Sumber Belajar	Hasil Belajar Between Groups (Combined)	2657.524	16	166.095	31.688	.000
	Linearity	2540.770	1	2540.770	484.736	.000
	Deviation from Linearity	116.754	15	7.784	1.485	.129
	Within Groups	456.016	87	5.242		
Total		3113.540	103			

Source: SPSS Data Processing Results

The linearity test results above show a Deviation from Linearity p-value of 0.129 > 0.05, linearity results of 0.000 < 0.05.

Table 7. X2 Linearity Test Results on Y

ANOVA Table								
				Sum of				
				Squares	df	Mean Square	F	Sig.
Hasil Belajar *Minat Belajar	Between Groups	(Combined)		2744.415	18	152.467	35.109	.000
		Linearity		2637.801	1	2637.801	607.417	.000
		Deviation from Linearity		106.614	17	6.271	1.444	.137
	Within Groups			369.125	85	4.343		
	Total			3113.540	103			

Source: SPSS Data Processing Results

The linearity test results above show a p-value Deviation from Linearity of 0.137 > 0.05, linearity results of 0.000 < 0.05.

Table 8. Linearity test results X1 to X2

ANOVA Table								
				Sum of Squares	df	Mean Square	F	Sig.
Minat Belajar* Penggunaan Gadget Sebagai Sumber Belajar	Between Groups	(Combined)		3966.953	16	247.934	17.889	.000
		Linearity		3699.742	1	3699.742	266.939	.000
		Deviation from Linearity		267.210	15	17.814	1.285	.229
	Within Groups			1205.808	87	13.860		
	Total			5172.760	103			

Source: SPSS Data Processing Results

The linearity test results above show a Deviation from Linearity p-value of 0.229 > 0.05, linearity results of 0.000 < 0.05.

4.1.4. Hypothesis Testing

Table 9. Correlation Coefficient of X1, X2 to Y

Correlations				
		Penggunaan Gadget Sebagai Sumber Belajar	Minat Belajar	Hasil Belajar
Penggunaan Gadget Sebagai Sumber Belajar	Pearson Correlation	1	.846**	.903**
	Significance(2-tailed)		.000	.000
	N	104	104	104
Minat Belajar	Pearson Correlation	.846**	1	.920**
	Significance(2-tailed)	.000		.000
	N	104	104	104
Hasil Belajar	Pearson Correlation	.903**	.920**	1
	Significance(2-tailed)	.000	.000	
	N	104	104	104

** . Correlation at 0.01(2-tailed):...

Source: SPSS Data Processing Results

The results of the correlation coefficient test (Pearson Correlation) obtained a p-value for each relationship between variables is smaller than the 0.01 level (2-tailed) with a magnitude of 0.000 so that there is a significant relationship between constructs.

Table 10. Determination Test Results X1 to X2

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.846 ^a	.715	.712	3.80018

a. Predictors: (constant) Penggunaan Gadget Sebagai Sumber Belajar...

b. Dependent Variable: Minat Belajar

Source: SPSS Data Processing Results

The coefficient of determination (R^2) of 0.715 is included in the strong category, meaning that 71.5% of the variability in interest in learning can be explained by the construct of using gadgets as a learning resource. while the remaining 0.846 is explained by other constructs that are not included in this study. so that for the path coefficient X1 to X2 the error = $\sqrt{1 - R^2} = 0.534$ is obtained.

Table 11. F or ANOVA Test Results X1 against X2

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Significance
1	Regression	3699.742	1	3699.742	256.191	.000 ^b
	Residual	1473.017	102	14.441		
	Total	5172.760	103			

a. Dependent Variable: Minat Belajar

b. Predictors: (constant) Penggunaan Gadget Sebagai Sumber Belajar...

Source: SPSS Data Processing Results

The results of the F test, obtained a p-value of 0.000 or has a value less than 0.05.

Table 12. T Test Results of Path Coefficient X1 to X2

Coefficients					
		Unstandardized Coefficients	Standardized Coefficients	t	Significance
Model		B	Std. Error	Beta	
1	(Constant)	-3.395	5.086		-.668 .506
	Penggunaan Gadget Sebagai Sumber Belajar	1.025	.064	.846	16.006 .000

a. Dependent Variable: Minat Belajar

Source: SPSS Data Processing Results

The path coefficient obtained in the Beta (Standardized Coefficients) column, for the X1 to X2 (PX1X2) path is 0.846. P-value of 0.000 < 0.05

Table 13. Determination Test Results X1, X2 Against Y

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.950 ^a	.902	.900	1.73809	

a. Predictors: (constant) Minat Belajar, Penggunaan Gadget Sebagai Sumber Belajar...

b. Dependent Variable: Hasil Belajar

Source: SPSS Data Processing Results

The coefficient of determination (R^2) of 0.902 is included in the strong category, meaning that 90.2% of the variability in learning outcomes can be explained by the constructs of using gadgets as learning resources and interest in learning. While 95.0% is explained by other constructs that are not included in this study. So that the error = $\sqrt{1 - R^2} = 0.313$ is obtained

Table 14. F or ANOVA Test Results X1, X2 on Y

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Significance
1	Regression	2808.425	2	1404.212	464.826	.000 ^b
	Residual	305.115	101	3.021		
	Total	3113.540	103			

a. Dependent Variable: Hasil Belajar

b. Predictors: (constant) Minat Belajar, Penggunaan Gadget Sebagai Sumber Belajar...

Source: SPSS Data Processing Results

The results of the F test, obtained a p-value of 0.000 or has a value less than 0.05.

Table 15. T Test Results of Path Coefficient X1, X2 on Y

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Significance
		B	Std. Error	Beta		
1	(Constant)	12.546	2.331		5.381	.000
	Penggunaan Gadget Sebagai Sumber Belajar	.412	.055	.439	7.515	.000
	Minat Belajar	.426	.045	.549	9.413	.000

a. Dependent Variable: Hasil Belajar

Source: SPSS Data Processing Results

(PX1Y): this path has a path coefficient of 0.439. P-value of 0.000 < 0.05.

(PX2Y): this path has a path coefficient of 0.549. P-value of 0.000 < 0.05

Table 16. Summary of Hypothesis Testing Results

Direct Influence	Path Coefficient (p)	p-value	Summary
X1 to Y (PX ₁ Y)	0.439	0.000	Sig
X2 to Y (PX ₂ Y)	0.549	0.000	Sig

X1 to X2 (PX ₁ X ₂)	0.846	0.000	Sig
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Source: SPSS Data Processing Results

To determine the indirect effect of construct X1 on Y through X2, it is calculated by $(PX_1X_2) \times (PX_2Y) = 0.846 \times 0.549 = 0.464454 = 0.464$ So that the total effect is $0.464 + 0.439 = 0.903$.

$$S_{ab} = \sqrt{b^2Sa^2 + a^2Sb^2 + Sa^2Sb^2}$$

$$S_{ab} = \sqrt{(0.549)^2(0.045)^2 + (0.846)^2(0.064)^2 + (0.045)^2(0.064)^2}$$

$$S_{ab} = \sqrt{0.301401 \times 0.002025 + 0.715716 \times 0.004096 + 0.002025 \times 0.004096}$$

$$S_{ab} = \sqrt{0.000610337025 + 0.002931572736 + 0.0000082944}$$

$$S_{ab} = \sqrt{0.003550204161}$$

$$S_{ab} = 0.059583589695486$$

$$t_{\text{count}} = \frac{ab}{S_{ab}} = \frac{0.464}{0.059583589695486} = 7.787379081578769 = 7.78738$$

$$t_{\text{table}} = df; \alpha = 1.98373$$

The value of $t_{\text{count}} > t_{\text{table}}$, so it can be concluded that the mediation coefficient (interest in learning) of 0.464454 if rounded up to 0.464 is significant, which means that there is a mediating influence. Apart from using the manual method as above, the sobel test can also be done using the following Sobel Test Calculator:

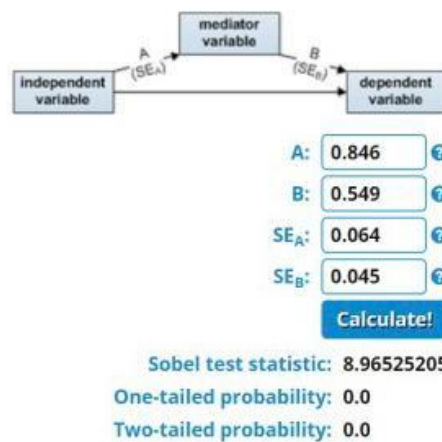


Figure 3. Sobel Test Results

Source : <https://www.danielsoper.com/statcalc/calculator.aspx?id=31>

- 1) Path coefficient of using gadgets as learning resources on student learning outcomes

$$Y = PX_1YX_1$$

$$Y = 0.439X_1$$

- 2) Path coefficient of learning interest on student learning outcomes

$$Y = PX_2YX_2$$

$$Y = 0.549X_2$$

- 3) Path coefficient of using gadgets as learning resources on learning interest

$$X_2 = \rho_{X_1 X_2} X_1$$

$$X_2 = 0.846 X_1$$

- 4) Path coefficient of using gadgets as learning resources on student learning outcomes through learning interest

$$Y = \rho_{X_1 Y} X_1 + \rho_{X_2 Y} X_2$$

$$Y = 0.439 X_1 + 0.549 X_2$$

4.2. Discussion

4.2.1. The direct effect of using gadgets as learning resources on student learning outcomes

Based on the results of the hypothesis testing that has been carried out, the effect of using gadgets as a learning resource on student learning outcomes has a path coefficient of 0.439 and a p-value of $0.000 < 0.05$ which means significant, thus H1 is accepted. This means that the use of gadgets as a learning resource (X1) has a positive direct effect on learning outcomes (Y).

4.2.2. The direct effect of interest in learning on student learning outcomes

Based on the results of the hypothesis testing that has been carried out, the effect of interest in learning on learning outcomes has a path coefficient of 0.549 and a p-value of $0.000 < 0.05$, thus H2 is accepted. This means that interest in learning (X2) has a positive direct effect on learning outcomes (Y) of 0.549.

4.2.3. Direct Effect of using gadgets as a learning resource on interest in learning

Based on the results of the hypothesis test that has been carried out, the effect of using gadgets as a learning resource on interest in learning has a path coefficient of 0.846 and a p-value of $0.000 < 0.05$. Thus, H3 is accepted, meaning that the use of gadgets as a learning resource (X1) has a direct positive effect on interest in learning (X2).

4.2.4 The indirect effect of using gadgets as a learning resource on student learning outcomes through learning interest

Based on the results of the hypothesis testing that has been carried out, the indirect effect of using gadgets as a learning resource on student learning outcomes through learning interest is obtained a value of 0.464. This indirect effect is proven based on the results of the Sobel test calculation manually and using an online calculator which shows the p value < 0.05 so that H4 is accepted, so it can be interpreted that there is an indirect effect of using gadgets as a learning resource on student learning outcomes through learning interest.

5. CONCLUSION

- 1) The use of gadgets as a learning resource has a direct positive effect on student learning outcomes with a magnitude of 0.439.
- 2) Learning interest has a direct positive effect on student learning outcomes with a magnitude of influence of 0.549.

- 3) The use of gadgets as a learning resource has a positive direct effect on learning interest with a magnitude of 0.846.
- 4) There is an indirect effect of using gadgets as learning resources on student learning outcomes through student learning interest of 0.464 with a p-value <0.05 , which means that learning interest has a role in mediating the use of gadgets as learning resources on student learning outcomes.

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