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# THE RELATIONSHIP BETWEEN STUDENTS' PERCEPTION AND SATISFACTION ABOUT THE IMPLEMENTATION OF ONLINE LEARNING TOWARDS SCIENCE LEARNING OUTCOMES

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## **Abstract**

*The purpose of this study was to determine the relationship between perceptions and student satisfaction regarding the implementation of online learning on student cognitive learning outcomes in science subjects at SMPN 1 Jabon. The method used in this study was the ex-post facto type of quantitative correlation method. The population used in this study were all students of SMP 1 Jabon class VII with a sample of 68 students. Data collection techniques used were questionnaires and documentation. The data analysis technique used to test the hypothesis was multiple correlation analysis techniques. The results of this study indicate that: 1. There is a relationship between perceptions about the implementation of online learning on the cognitive learning outcomes of students in science subjects, 2. There is a relationship between student satisfaction about the implementation of online learning and student cognitive learning outcomes in science subjects, 3. There is a positive relationship and significant between student perceptions and satisfaction with the cognitive learning outcomes of class VII students in science subjects for the 2019/2020 school year. Where the  $F_{count}$  price is 5,261. This value is greater than the  $F_{table}$  value at the 5% significant level of 3.14. So the price  $F_{count} > F_{table}$ .*

**Keywords:** Perception, Satisfaction, Implementation of Online Learning, Cognitive Learning Outcomes

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## **Abstrak**

Tujuan dari penelitian ini adalah mengetahui hubungan persepsi dan kepuasan siswa tentang pelaksanaan pembelajaran daring terhadap hasil belajar kognitif siswa pada mata pelajaran IPA di SMP Negeri 1 Jabon. Metode yang digunakan dalam penelitian ini adalah metode kuantitatif korelasional tipe *ex-post facto*. Populasi yang digunakan dalam penelitian ini adalah siswa SMPN 1 Jabon kelas VII dengan sampel 68 siswa. Teknik pengumpulan data yang digunakan dengan menggunakan angket dan dokumentasi. Teknik analisis data yang digunakan untuk menguji hipotesis adalah teknik analisis korelasi berganda. Hasil penelitian ini menunjukkan: 1. Terdapat hubungan yang positif dan tidak signifikan antara persepsi tentang pelaksanaan pembelajaran daring terhadap hasil belajar kognitif siswa pada mata pelajaran IPA, 2. Terdapat hubungan yang positif dan signifikan antara kepuasan siswa tentang pelaksanaan pembelajaran daring terhadap hasil belajar kognitif siswa pada mata pelajaran IPA, 3. Terdapat hubungan yang positif dan signifikan antara persepsi dan kepuasan siswa terhadap hasil belajar kognitif siswa kelas VII pada mata pelajaran IPA tahun ajaran 2019/2020. Dimana harga  $F_{hitung}$  sebesar 5,261. Nilai ini lebih besar dari nilai  $F_{tabel}$  pada taraf signifikan 5% sebesar 3,14. Jadi harga  $F_{hitung} > F_{tabel}$ .

**Katakunci:** Persepsi, Kepuasan, Pelaksanaan Pembelajaran Daring, Hasil Belajar Kognitif

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## **INTRODUCTION**

Online learning is learning that utilizes internet networks for an educational process, including science learning (Rusman, 2012). Science subjects delivered through online learning must be able to provide meaningful experiences and in accordance with the abilities and needs of students, so that students do not need to be afraid to miss learning because they can access any science learning material on the internet as expected. The achievement of students' expectations of the online learning process in science subjects that are obtained in accordance with the desired learning objectives will lead to good perceptions of students. Students will also feel satisfied with the learning provided by the teacher (Fitri & Putra, 2019). Learning outcomes are changes in behaviour that obtained by learners after carrying out learning activities. The desired changes include three domains, one of which is the cognitive domain. Cognitive learning outcomes are intellectual learning outcomes which include understanding, thinking skills and knowledge (Fitriana, 2011).

The results of observations at SMPN 1 Jabon show that science learning is carried out through online learning using google classroom. Before online learning activities began, students usually did attendance via WhatsApp. the next activity is the delivery of material by the teacher. After the teacher delivers the material, students then work on the assignment or question on the student worksheet. Materials or assignments given by teachers through online learning tend to get less student response and students are less interested in online learning. However, student learning outcomes show 100% completeness. There is a tendency that online learning does not involve students actively in learning. This is very influential on the student learning outcomes, where students who reach the minimum completeness criteria are only 71%.

Online learning in science subjects is expected to support learning activities that cannot be done in the classroom. The implementation of online learning that is good and can be understood by students will lead to good perceptions from students. Implementation of online learning begins with a process of analysis, planning, implementation, and evaluation. This kind of learning is expected to meet the learning needs of students so that students will feel satisfied. The satisfaction that students feel about their learning needs is believed to be able to improve their cognitive learning outcomes.

Perception and satisfaction about the implementation of online learning is very important. According to Isman in Irawati & Sanitaria (2020), identification of student perceptions about the implementation of online learning is carried out to determine student responses and acceptance of something. Information about students' perceptions can be used to determine how much they can accept online learning and also support the success of online learning. Chang and Fisher in Yasir (2017) suggest that the level of student satisfaction in learning is very important when they acquire skills or knowledge. A student is considered satisfied if they feel the learning received has met their needs and expectations. This can improve student performance to do better in learning and be positive about learning.

The purpose of this study was to determine the relationship between perceptions and student satisfaction regarding the implementation of online learning on science cognitive learning outcomes. The results of this study are expected to increase knowledge about the relationship between student satisfaction and perceptions about the implementation of online learning on science cognitive learning outcomes.

## METHODS

The type of this research is correlational quantitative research with the type of Ex Post facto. According to Syaodih (2009), this research was conducted to examine events that had occurred. The research design is shown in Figure 1.

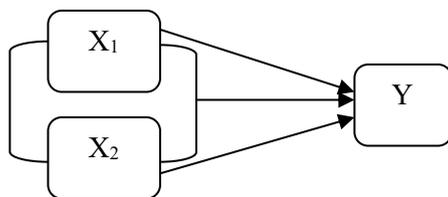


Figure 1. Research Design

The population in this study were all students of class VII SMPN 1 Jabon with a total of 340 students. The sample used was 68 students of class VIIA and VII B at SMPN 1 Jabon. Samples were obtained from 20% of all students in one class who had test scores above the minimum completeness criteria. The research data were obtained through a questionnaire instrument and documentation. There are 2 questionnaire instruments, namely the perception questionnaire and the satisfaction questionnaire. Instruments in online form made via Google form. Indicators about perceptions of the implementation of online learning consist of needs analysis, planning, implementation, and evaluation. Perception indicators and sub indicators are presented in Table 1. Satisfaction indicators include reliability, responsiveness, certainty, empathy, and tangibility. Satisfaction indicators and sub indicators are presented in Table 2. Students fill out the questionnaire using their own smartphone using the provided Google address form. Cognitive learning outcomes data obtained from final semester test scores.

Table 1. Indicators related to Perceptions of Online Learning Implementation

No	Indicator	Sub-indicator
1	Needs Analysis	Readiness for Learning Activities
		Needs of the learning process
		Infrastructure
2	Planning	Network
		Learning Management System
		Subject matter
		Management supervision
3	Implementation	Learning Activity Implementation Strategy
		Teaching Systems Approach
4	Evaluation	Performance Assessment
		Enrichment

Source: Hartanto, W. (2016)

Table 2. Indicators related to Satisfaction of Online Learning Implementation

No.	Indicator	Sub-Indicator
1.	Reliability	School Policy
		Teacher Competence
		Consistency
2.	Responsiveness	Teacher's willingness to listen to complaints
3.	Certainty	A place to learn
		Developing Potential
4.	Empathy	Teacher's Understanding of Students
5.	Tangible	Learning Media

Source: Hamidah, S. N. (2019)

Data analysis from the questionnaire was conducted to determine the relationship between perceptions of the implementation of online learning and online learning satisfaction with students' cognitive learning outcomes. Data analysis using SPSS 24. Based on the results of data analysis, an interpretation of the low strength of the relationship between variables will be obtained. Guidelines for determining the level of relationship between variables are shown in Table 3.

Table 3. Interpretation of the Correlation Coefficient

Coefficient Interval	Relationship Level
0.00-0.199	Very low
0.20-0.399	Low
0.40-0.599	Medium
0.60-0.799	Strong
0.80-1.000	Very strong

Source: Sugiyono(2018)

The coefficient of determination is used as a measure of the suitability of the regression line from the estimation results against a group of research data. The level of compatibility of the regression lines between the dependent and independent variables is shown in Table 4. The greater the coefficient of determination, the better the regression line is formed, and vice versa. The formula for the coefficient of determination is as follows:

$$Kd = r^2 \cdot 100\%$$

Note:

$Kd$  = Coefficient of Determination

$r$  = Product Moment Correlation

Table 4. The coefficient of determination

Coefficient Interval	Relationship Level
0%-19.9 %	Very low
20%-39.9%	Low
40%-59.9%	Medium
60%-79.9%	Strong
80%-100%	Very strong

Source: Sugiarti (2012)

Questionnaire data was calculated using Pearson Product moment correlation analysis and multiple correlation to find the relationship between variables using SPSS 24.

## RESULTS AND DISCUSSION

### First Hypothesis Test

The first hypothesis in this study is that there is a positive relationship between students' perceptions of the implementation of online learning and the science learning outcomes of grade VII students. The results of the Pearson product moment correlation analysis are presented in Table 5.

Table 5. Item Total Statistics

		Correlations	
		PERCEPTION	COGNITIVE VALUE RESULTS
PERCEPTION	Pearson Correlation	1	.139
	Sig. (2-tailed)		.259
	N	68	68
COGNITIVE VALUE RESULTS	Pearson Correlation	.139	1
	Sig. (2-tailed)	.259	
	N	68	68

Source: SPSS 24

Based on the results of the analysis, the correlation coefficient is .139 and the coefficient of determination is .019. The correlation coefficient of .139 was consulted on  $r_{table}$  with the number  $N = 68$  and a significant level of 5%. The  $r_{table}$  value is .235; so that the value of  $r_{count} < r_{table}$ , so  $H_0$  is accepted and  $H_1$  is rejected. This means that there is a positive and insignificant relationship between students' perceptions about the implementation of online learning and the science learning outcomes of grade VII students at SMP 1 Jabon in the 2019/2020 school year.

According to Cahyaningsih (2013), perception is a person's view of something through their senses. Perception is a process that stimulates the entry of messages or information into the human brain. Students' perceptions about the implementation of online learning are related to the attainment of knowledge obtained through online learning. According to Irawati & Sanitaria (2020), the higher the perception of the implementation of online learning, the higher the students' mastery of knowledge. Mastery of knowledge about the implementation of online learning is also followed by student cognitive learning outcomes. Cognitive learning outcomes are a measure of the ability to restate the concepts that have been learned, which includes thinking skills, competence in gaining knowledge, recognition, understanding, conceptualization, determination and reasoning. Cognitive learning outcomes determine the level of understanding and mastery of the material conveyed through online learning.

The results showed that the high students' perceptions did not significantly affect the science learning outcomes. This might happen because students' perceptions reach the low category. Low student perceptions can affect student cognitive learning outcomes. According to Budi (2011), students' low perceptions can also be influenced by internal as well as external factors.

### Second Hypothesis Test

The second hypothesis in this study is that there is a positive relationship between student satisfaction about the implementation of online learning to the science learning outcomes of grade VII students. The results of the Pearson product moment correlation analysis are presented in Table 6.

Table 6. Item Total Statistics

		Correlations	
		Satisfaction	Cognitive Value Results
Satisfaction	Pearson Correlation	1	.360**
	Sig. (2-tailed)		.003
	N	68	68
Cognitive Value Results	Pearson Correlation	.360**	1
	Sig. (2-tailed)	.003	
	N	68	68

Based on the results of the analysis, the correlation coefficient was .360 and the coefficient of determination was .130. The correlation coefficient of 0.360 was consulted on  $r_{table}$  with  $N = 68$  and a significant level of 5%. The value of  $r_{table}$  is obtained at 0.235 so that the value of  $r_{count}$  is greater than  $r_{table}$ , so that  $H_0$  is rejected and  $H_1$  is accepted. This means that there is a positive and significant relationship between student satisfaction with science learning outcomes.

According to Hamidah (2019), student satisfaction is an attitude shown by students, both positive and negative attitudes towards the match between their expectations of the teaching and learning services they receive. Student satisfaction when participating in online learning, students will personally assess whether they are satisfied or not satisfied with the learning process they are going through. Students who have high online learning satisfaction will also have high learning readiness so that the learning outcomes obtained are also high. Learning outcomes in this case are cognitive learning outcomes.

The results of this study were supported by Fitri & Putra (2019). The results of both studies indicate a significant relationship between student satisfaction and online learning readiness. In this study, there is a significant relationship between the satisfaction of the implementation of online learning and science learning outcomes. However, the relationship is in the low category according to Table 3.1 interpretation of the correlation coefficient.

**Third Hypothesis Test**

The third hypothesis is that there is a significant and positive relationship between student perceptions and satisfaction in the implementation of online learning on science learning outcomes of grade VII students. This hypothesis uses multiple regression analysis. The analysis results are presented in Table 7.

Table 7. Model Summary

Model Summary									
Model	R	R <sup>2</sup>	Adj. R <sup>2</sup>	Std. Error of the Estimate	Change Statistics				
					R <sup>2</sup> Change	F Change	df 1	df 2	Sig. F Change
1	.373 <sup>a</sup>	.139	.113	1.922	.139	5.261	2	65	.008

a. Predictors: (Constant), SATISFACTION, PERCEPTION

The mean results between variables are shown in Table 8. The calculated F value will be compared with the value in Table F. If  $f_{count} > f_{table}$ , then  $H_1$  is accepted and  $H_0$  is rejected. That is, there is a relationship between variables..

Table 8. ANOVA Summary

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.854	2	19.427	5.261	.008 <sup>b</sup>
	Residual	240.014	65	3.693		
	Total	278.868	67			

a. Dependent Variable: COGNITIVE VALUE RESULTS  
 b. Predictors: (Constant), SATISFACTION, PERCEPTION

Table 9. Coefficients

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	58.844	4.819		12.210	.000
	PERSEPSI	.013	.015	.099	.858	.394
	KEPUASAN	.138	.046	.349	3.011	.004

a. Dependent Variable: COGNITIVE VALUE RESULTS

The regression line equation based on the above results is as follows:

$$Y = .013X_1 + .064X_2 + 48.884$$

This equation shows that the value of the perception coefficient ( $X_1$ ) is 0.013. That is, if the value of perception ( $X_1$ ) increases 1-point, cognitive learning outcomes ( $Y$ ) will increase by .013 points, assuming satisfaction ( $X_2$ ) is constant. The satisfaction coefficient ( $X_2$ ) is .064. That is, if satisfaction ( $X_2$ ) increases by 1 point, the increase in cognitive learning outcomes  $Y$  will increase by .064 points, assuming perception ( $X_1$ ) is constant.

The results of the regression analysis above show the coefficient of determination ( $r^2$ ) of .139. This value means that 13.9% change in the cognitive learning outcome variable ( $Y$ ) can be determined by perception ( $X_1$ ) and student satisfaction ( $X_2$ ), while 86.1% is explained by other variables not examined in this study. The coefficient of determination ( $r^2$ ) of 13.9% is determined by the perception variable ( $X_1$ ) and student satisfaction ( $X_2$ ) in the very low category according to Table 3.4 the coefficient of determination.

The significance test of the hypothesis in Table 8 shows that the  $F_{count}$  value is 5.261. The value of  $F_{count} > F_{table}$  at a significant level of .05 is 3.14. So,  $F_{count} > F_{table}$ , so for the third hypothesis,  $H_0$  is rejected and  $H_1$  is accepted. This means that there is a positive and significant relationship between perception and satisfaction together on science learning outcomes of grade VII students.

The results of this study are supported by the opinion of Azizah (2017) which states that learning using blended learning with schoology can improve learning outcomes at the cognitive level of students' higher order thinking skills with the moderate category (0.619).

Based on the results of the correlation analysis, changes in the cognitive learning outcomes variable ( $Y$ ) were 13.9%. According to Azizah (2017), learning success can be influenced by many factors, including factors from within oneself. To get satisfactory learning outcomes, students must be able to manage these factors well. In this study, 86.1% of learning success was influenced by other factors. Factors in yourself include health, intelligence, talents, interests, motivation, and learning styles. Meanwhile, factors from outside oneself include the family environment, school, community, and the environment.

In this hypothesis, it can be proven that there is a significant and positive relationship between student perceptions and satisfaction about the implementation of online learning on learning outcomes. This means that perceptions and satisfaction about the implementation of online learning have a positive and significant impact on cognitive learning outcomes. However, the relationship is in the low category according to Table 3.1 interpretation of the correlation coefficient. This can happen because it is influenced by several satisfaction factors that have high scores so that they can have a significant and positive relationship.

## CONCLUSION

Based on the research results, it was concluded that there was a positive and significant relationship between students' perceptions and satisfaction with the science learning outcomes of grade VII students. This is evidenced by the coefficient of determination ( $r^2$ ) of 13.9% which is determined by the perception variable ( $X_1$ ) and student satisfaction ( $X_2$ ) in the very low category. In addition, we suggest for further research, related to questionnaire data collection techniques, are better done directly by students without going online. So that the data taken is in accordance with the students' own thoughts without being manipulated and more accurate. For future researchers, it is hoped that they can understand perceptions and satisfaction about the implementation of online learning to make it easier to retrieve data.

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