Faculty of Tarbiyah IAIN Kediri
ICOE The Ananual International Conference on Education Proceedings

PROBLEM SOLVING ABILITY RELATIONSHIP AND CRITICAL THINGKING WITH STUDENT PAI LEARNING OUTCOMES IN STATE JUNIOR HIGH SCHOOL, TARUMAJAYA DISTRICT, REGENCY. BEKASI

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Article Info
Article History:
Received 01 July 2023
Revised 23 September 2023
Accepted 29 November 2023
Available online 26 Desember 2023

Abstracts
Learning outcomes are one indicator of the success or failure of learning. Several indicators influence learning outcomes, including the ability to solve problems and critical thinking skills. This study aims to determine the relationship between problem-solving and critical thinking skills together with the learning outcomes of PAI students at junior high schools in Tarumajaya District, Kab. Bekasi. The method used is a quantitative method with a correlational approach. Data analysis techniques using the Paired T-Test, Anova Test and Test the coefficient of determination using the SPSS application. The sample was based on the Slovin formula of 283 students from a population of 967 students taken from grade 7 at SMPN. The results of this study indicate that the research hypothesis is proven to have a value of Py12 > 0, which explains that there is a positive relationship between problem-solving abilities (X_1) and critical thinking (X_2) together with Islamic education learning outcomes of students (Y) in public junior high schools in Tarumajaya District, Kab. Bekasi means that X_1 and X_2 jointly affect Y. Meanwhile, X_1 and X_2 also partially affect Y.

Keyword:
Student Learning Outcomes, Problem-Solving, Critical Thinking

Introduction

Learning outcomes are the results obtained after carrying out the learning process and to find out how much the quality of human resources. According to Agus Suprijono, learning outcomes are changes in overall behavior, not just one aspect of human potential. This means that the learning outcomes obtained by students must include all aspects taught by educators, both cognitive, affective and psychomotor aspects of students (Suprijono, 2011). With this, the learning outcomes obtained by students must meet the minimum criteria standards to produce good output. In this 21st century, knowledge and technology are very rapidly developing. In line with the rapid development of technology, faith in religion is also very important for the

life of the world and the hereafter (Hakim, 2023). Therefore, the learning outcomes of Islamic Religious Educators are very important in education. even PAI education cannot be separated from life and religion. Both in the life of the nation and state so that education is used as a measure of the back and forth of a nation (Setya, 2022). According to the Directorate General of Teachers and Employment, in the development of the 21st century, students must have 21st century skills, such as: critical thinking and problem solving, creativity and innovation, collaboration and communication (Syahputra, 2018).

Based on observations made by researchers that students' PAI learning outcomes are low caused by several factors such as the teaching and learning process in the classroom, generally students are more passive, there are only a few who are active. This can be seen when the learning process takes place, learning still uses conventional methods so that the learning process is teacher-oriented and does not involve students directly. In addition, there is no renewal in critical thinking and improved problem-solving skills. Without the development of renewal in thinking will make students have low critical thinking skills, difficult in solving problems, difficult in making decisions and others. All these problems will have an impact on student learning outcomes and produce low output. One of the determinants of student success or high learning outcomes is the extent of the student's *problem-solving* ability. Where someone who *has high problem-solving skills then he also has competence in solving problems well and vice versa, when problem solving skills are low, it does not rule out the possibility that he will face obstacles in the learning process. critical thinking (critical thingking*) can also affect learning success in students. Critical thinking is thinking that is always curious about an existing problem so that it will continue to seek information to achieve an appropriate understanding.

According to Uno, *problem solving* is the ability to use the thinking process in solving problems by collecting facts, analyzing information, preparing alternative solutions, and choosing more effective problem solutions. This means that problem solving is the search for solutions through a systematic thinking process (Uno, 2014). from the opinion of uno it can be understood that *problem solving* is the ability to use thinking activities in problem solving based on a collection of facts, analysis of information, compiling solutions, and choosing effective problem solving. Meanwhile, according to Ennis, critical thinking is rational and reflective thinking that focuses on what is believed to determine the decisions to be taken (Fisher, 2009). From Ennis's opinion, it can be understood that, critical thinking is logical thinking and considering carefully everything that is believed in making decisions.

The ability to think at a higher level which includes logical, reflective, metacognition, critical, and creative thinking is a benchmark in achieving a mathematics learning, where this higher-order thinking ability comes through a learning process or education that specializes in mathematics education (Abdullah, 2016). Even the results of research from Syafitri et al stated that the ability to think critically in students has the potential to be good in building the quality of thinking, for example when faced with a critical situation they are able to make decisions appropriately, quickly and efficiently so that it has a very important impact on daily life. Furthermore, Kurniawati's research states that critical thinking skills are able to minimize mistakes when facing a problem and produce solutions followed by the right conclusion (Arini dan Kurniawati, 2020).

With this, education plays an important role in improving the quality of human resources to be ready to face the rapid development of the times and existing problems. For this reason, it can be achieved through the implementation of the 2013 curriculum. The aim of education is to make students more active, creative and independent and equip them with the life skills needed in this century. One of the most important things students need to master is critical thinking. Because some of these factors are the reasons that require Indonesian education to prepare themselves to face the rapid development of knowledge and technology, such as equipping students with learning that can improve students' thinking skills. For this

reason, the Ministry of Education and Culture made system changes in learning and those changes will be made to the 2013 curriculum which requires students to have higher-order thinking skills also called complex thinking consisting of critical thinking, creative thinking, problem solving and decision making. This aims to improve student learning outcomes to the maximum. The 2013 curriculum also states that one achievement that must be achieved in a learning process is to produce a generation that is able to think critically (Earth, 2018).

From these problems, the author seeks to improve the learning outcomes of Islamic Religious Education students through the ability of *problem solving* and *critical things.* Based on the description above, the researcher is interested in conducting a research entitled "The Relationship of *Problem Solving* Ability and *Critical Thing* with PAI Learning Outcomes of Students at SMP Negeri Sekecamatan Tarumajaya Kab. Bekasi"

Methods

In this study, researchers used quantitative research methods. This quantitative research uses a correlational approach, which is to determine whether there is a relationship between two variables or several variables. This study used a multivariate correlation approach. Salim & Syahrum Multivariate correlation is a relationship between two or more variables (Salim Shahrum, 2012).

This research will be carried out from May 2, 2023 to July 25, 2023 at junior high schools in Tarumajaya sub-district, Bekasi Regency. Public Junior High School in Tarumajaya consists of SMPN 1 Tarumajaya, SMPN 2 Tarumajaya, SMPN 3 Tarumajaya. Then population is taken, according to Sugiyono population is a generalized area consisting of: objects / subjects that have certain quantities and characteristics set by researchers to be studied and then drawn conclusions (Sugiyono, 2019). From the three schools, researchers took a population in grade 7 which amounted to 967 students. After finding the population number, it is continued in sampling. The sample is part of the number and characteristics possessed by that population (Sugiyono, 2019). Sampling using the slovin formula with a level of accuracy of 5% amounted to 283 students.

Data collection techniques using questionnaires. The data analysis technique in this study is with pearson correlation. Research instruments to capture data for each variable. The results of the PAI learning outcome variable instrument test as many as 60 question items obtained 53 valid question items, problem solving variables as many as 60 question items obtained 57 valid question items and critical thing variables as many as 60 question items obtained 55 valid question items. The results of the reliability test of PAI learning outcome variables with alpha Cronbach 0.89 > 0.7, variable problem solving with alpha cronbach 0.84 > 0.7 and critical variables with alpha cronbach 0.88 > 0.7. This indicates that the question items of each research variable are reliable.

The data were analyzed using inferential statistics correlation test. The hypothesis test was conducted to determine the correlation between variables X_1 with Y, X_2 with Y partially and variables X_1 and X_2 together using multiple correlation tests with SPSS software version 26.0. Before the hypothesis test, researchers conducted prerequisite tests in the form of linearity tests and normality tests which were also processed under the name of SPSS Version 26.0 software.

Results and Discussion

A. Statistical Results Description

Based on the data obtained, the data description in this study includes data on variable Y (PAI learning outcomes) as a dependent variable, variable X_1 (Problem Solving *Ability) and variable* X_2 (critical thingking) as an independent variable. The description of each variable is presented successively starting from variables X_1, X_2, and Y.

Table 1. Frequency Distribution of Research Variables

Statistics

		Problem Solving Skills	critical thingking	PAI learning outcomes
N	Valid	283	283	283
	Missing	0	0	0
Mean		42.9011	43.2792	41.7350
Std. Error of Mean		.48372	.53897	.54629
Median		44.0000	45.0000	44.0000
Mode		47.00	47.00	49.00
Std. Deviation		8.13739	9.06692	9.19010
Variance		66.217	82.209	84.458
Range		43.00	43.00	50.00
Minimum		15.00	16.00	10.00
Maximum		58.00	59.00	60.00
Sum		12141.00	12248.00	11811.00

From table 1 above, it is obtained that the learning outcome instrument has an average (mean) of 41.7350 with a standard deviation of 9.1901 where the variance value is 84.458, the median value is 44 and the mode value is 49. The *Problem-Solving Ability* Instrument has an average (mean) of 42.9011 with a standard deviation of 8.13739 where the variance value is 66.217, the median value is 44 and the mode value is 47. The *critical thinking instrument* has an average (mean) of 43.2792 with a standard deviation of 9.06692 where the variance value is 82.209, the median value is 45 and the mode value is 47.

B. Normality Test

Before the hypothesis test is carried out, a normality test is carried out first to determine the normality of the data.

Table 2

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		283
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	6.46675816
Most Extreme Differences	Absolute	.050
	Positive	.049
	Negative	-.050
Test Statistics		.050
Asymp. Sig. (2-tailed)		.087c

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Based on the calculation results contained in the normality test in the table, a significant value of 0.087 > 0.05 was obtained. It can be concluded that the residual data are normally distributed.

C. Linear test

A linearity test is performed to determine the linearity of the regression equation.

Table 3. Linear test

No	Variable	Significance	information
1	Problem solving with learning outcomes	0,994	Linear
2	Critical thingking with learning outcomes	0,063	Linear

Based on the results of the linearity test, the significance value of each variable is greater than 0.05, which means that there is a linear relationship between the variables of problem solving and critical things with PAI learning outcomes.

D. Correlation Analysis of *Problem-Solving Ability* with PAI Learning Outcomes

Test the correlation hypothesis of *Problem-Solving Ability* with PAI Learning Outcomes using person correlation in the following table:

Table 4. Correlation of *Problem-Solving Ability* with PAI Learning Outcomes

Correlations

		Problem Solving Skills	PAI learning outcomes
Problem Solving Skills	Pearson Correlation	1	.449**
	Sig. (2-tailed)		.000
	N	283	283
PAI learning outcomes	Pearson Correlation	.449**	1
	Sig. (2-tailed)	.000	
	N	283	283

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

Table 4 shows the value of Sig. (2-tailed) between the variable of problem-solving ability (X_1) with PAI learning outcomes (Y) is 0.000 < 0.05 with an r value of 0.449 so that it can be concluded that there is a significant correlation between problem solving ability and PAI learning outcomes. These results show that in improving PAI learning outcomes, students need to improve problem solving skills that will result in improvements in student learning outcomes.

Problem solving *skills* have broad relevance in various aspects of life, both in academic, professional, and personal contexts. In the context of Islamic religious education, problem solving skills enable individuals to face moral and ethical challenges, apply religious values in decision making, and address social and contemporary issues with a directed approach and based on religious teachings.

With this, the *ability* to solve problems has a close relationship with the learning outcomes of Islamic Religious Education (PAI). Thus, *problem solving* skills can help individuals in understanding and applying the teachings of Islam in their daily lives. Through this ability, individuals can face problems and challenges with a directed approach and based on religious principles, thus influencing the acquisition of satisfactory PAI learning outcomes.

Based on sources of knowledge and from the results of several studies related to problem solving abilities, *it can be stated that* problem solving abilities *have* an influence on PAI learning outcomes. So, it can be concluded that there is a significant correlation between

problem solving ability and PAI learning outcomes of grade VII students in SMP Negeri in Tarumajaya sub-district, Bekasi Regency. Students who *have good problem-solving* skills will have better learning outcomes that will be obtained.

E. Analysis of the Correlation of Critical Things with PAI Learning Outcomes

Table 5. Correlation of Critical Thing with PAI Learning Outcomes

Correlations

		critical thingking	PAI learning outcomes
critical thingking	Pearson Correlation	1	.710**
	Sig. (2-tailed)		.000
	N	283	283
PAI learning outcomes	Pearson Correlation	.710**	1
	Sig. (2-tailed)	.000	
	N	283	283

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

Table 5 shows the value of Sig. (2-tailed) between Critical Thing (X 2) and PAI Learning Outcomes (Y) is 0.000 < 0.05 with an r value of 0.710 so that it can be concluded that there is a significant correlation between problem solving ability and PAI learning outcomes. These results show that in improving student PAI learning outcomes, Critical Thing needs to be improved, which will result in improvements in student learning outcomes.

Through the development of *critical thinking* skills, individuals can optimize understanding, reflection, and application of Islamic teachings in their lives. This ability enables them to question, analyze, and integrate religious values with complex life contexts, and in turn, contributes to better PAI learning outcomes and thus exerts a satisfying influence.

The test of the above hypothesis obtained the results of a significant influence between *critical thinking* and PAI learning outcomes. In the learning process, students will interact with teachers and other students. *Critical Things* can be a bridge to a process of socializing and communication in student learning.

This study can be concluded that there is a significant correlation between *critical things* and PAI learning outcomes of grade VII students in SMP Negeri in Tarumajaya sub-district, Bekasi Regency. Students who have *good critical things* will be the better the learning outcomes will be obtained.

F. Analysis of the Correlation of *Problem-Solving Ability* (X_1) and *Critical Thing* (X_2) with PAI Learning Outcomes (Y)

Table 6

Model Summary

Type	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.711a	.505	.501	6.48981	.505	142.745	2	280	.000

a. Predictors: (Constant), critical thingking, problem solving ability

Table 6 double correlation coefficients ($Ry._{12)\ =\ 0.711\ and\ F}$ *hit* (F_{change}) = 142.745 and p-value = 0.000 < 0.05 or H_0 are rejected. Thus, the double correlation coefficient between$_{X1}$ and X2 with Y is significant or significant. While the coefficient of determination is shown by *R Square* = 0.505 which means that 50.5% variability of learning outcome variables (Y) can be

explained by *problem solving* ability (X1) and *critical things* (X2), so it can be concluded that the relationship together with PAI learning outcomes is = 50.5%

In the context of PAI, *problem solving and* critical thinking *skills can* help students understand, analyze, and interpret religious teachings. Students who have good *problem solving* skills can identify and analyze situations related to religious contexts, such as understanding social problems faced by mankind and finding appropriate solutions based on religious teachings.

Meanwhile, strong *critical thinking* skills will assist students in evaluating and understanding religious texts, looking for connections between religious teachings and the context of daily life, and developing a deeper perspective on religious values and ethics.

Thus, if students have good *problem-solving and* critical thinking *skills, they tend to be able to understand religious teachings more deeply, relate them to real-life situations, and make wiser decisions based on religious values.*

Conclusion

Based on research data that has met these requirements, several conclusions can be drawn as follows:

1. There is a relationship between problem solving ability (X_1) and PAI learning outcomes (Y). Thus, H_0 is accepted and H_1 is accepted, in the sense of the word that problem solving ability has a positive influence on PAI learning outcomes, meaning that the higher (good) problem solving ability students have, the higher (good) PAI learning outcomes.
2. There is a critical relationship between thing (X_2) and PAI learning outcomes (Y). So thus, H_0 is accepted and H_1 is accepted, in the sense of the word that critical things have a positive effect on PAI learning outcomes, meaning that the higher the critical thing students have, the higher the students' PAI learning outcomes.
3. There is a relationship between problem solving ability (X_1) and critical thing (X_2) together with PAI learning outcomes (Y). it is found that the value of the double correlation coefficient between X1 and X_2 with Y is significant. which means that there is a high or strong relationship between problem solving ability (X_1) and critical thing (X_2) together with PAI learning outcomes (Y).

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