



# Brainstorming Method in Islamic Education: Analysis of Learning Activities of Students at Al-Kautsar Campaka Vocational School

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## ABSTRACTS

This study focuses on how to improve student learning activities in the Islamic Religious Education (PAI) learning process. This study aims to determine the effect of the brainstorming method on student learning activities in Islamic Religious Education (PAI) subjects. The research method used is descriptive quantitative. This study involved 20 tenth-grade students as samples. The results showed that 1) The brainstorming method in Islamic Religious Education (PAI) lessons at SMK Al-Kautsar Campaka has shown significant effectiveness, with a variable X value of 69.3% (good). 2) Student learning activities increased significantly after using the brainstorming method, with a variable Y value of 70% (good). 3) There was a positive and significant effect between the brainstorming method and student learning activities, with an effect of 61.5%. In the brainstorming method can be considered an effective instructional strategy to enhance student learning activities in Islamic Religious Education (PAI) subjects. Its implementation encourages active participation, idea sharing, and student engagement, thereby contributing positively to improving the overall learning process.

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## 1. INTRODUCTION

Islamic Religious Education (PAI) is an important component of the education curriculum in Indonesia. IRE plays an important role in shaping students' character and morals. However, the pedagogical approach of IRE is often considered monotonous and uninspiring. This phenomenon has led to a decline in student interest and engagement in learning IRE. Therefore, the pedagogical approach used in IRE subjects must be carefully evaluated to increase student engagement.

According to Nur'aini et al., (2024), learning methods involve the use of various basic educational principles and related resources to facilitate the learning process in learners. Thus, learning methods are very important in determining the effectiveness of the teaching and learning process.

Learning methods can be defined as a structured process or method (Azumah et al., 2025). In the learning process, the teacher acts as a facilitator. Teachers must be able to master the four basic competencies required for two-way communication and the achievement of learning objectives (Hidayat et al., 2024).

One learning method that can be used is brainstorming. This method is one that can increase creativity and student participation in the learning process. Brainstorming is a way to gather as many ideas as possible to solve problems in an open, relaxed, and non-judgmental manner. In problem solving, opinions can be given deductively, that is, from general concepts to specific concepts.

The importance of every human being having knowledge can be seen in Q.S Al-An'am verse 153, which reads:

وَهَذَا صِرَاطٌ مُسْتَقِيمٌ فَاتَّبِعُوهُ وَلَا تَتَّبِعُوا السُّبُلَ فَتَفَرَّقَ بِكُمْ عَنْ سَبِيلِهِ ذَلِكُمْ وَصَّاكُمْ بِهِ لَعَلَّكُمْ تَتَّقُونَ

Meaning: "And that this is My straight path, so follow it, and do not follow other paths, lest they scatter you from His path." (Q.S. Al-An'am: 153)

The above surah shows that as His servants, Allah gives us the freedom to think and act according to our own will. Everyone has the right to voice their opinions, but only if those opinions are relevant or fundamental. This is in line with the Brainstorming learning approach, which allows students to express their own opinions or ideas.

Brainstorming is a group problem-solving technique that encourages students to freely express various ideas without judging them at the initial stage. This method is designed to spark creativity and increase active participation, as well as provide space for students to interact and share their ideas.

However, although the Brainstorming method has been widely applied in various fields of study, its application in Islamic Education, especially at the secondary school level, is still relatively rare (Chang & Li, 2025). In fact, by integrating this method into Islamic Education learning, it is hoped that a more dynamic and interactive learning atmosphere can be created (Acharya & Sigdel, 2024).

Most studies examining the effects of brainstorming methods focus more on academic outcomes or improvements in critical thinking skills, while few examine its impact on learning activities, such as engagement, participation, and motivation in learning. Therefore, it is important to further examine the effects of using brainstorming methods on students' learning activities in Islamic Education subjects (Endla, 2025; Widiastuti et al., 2022).

Most Islamic Religious Education (PAI) teachers still tend to use the lecture method in delivering teaching materials. Although the lecture method has advantages in delivering

information efficiently, this method often makes students passive, uninterested, and not actively involved in learning.

In order to overcome this problem, a learning method is needed that can increase student involvement in the learning process. One method that has the potential to overcome this problem is brainstorming. Through this method, students are encouraged to participate actively, express ideas, and discuss in groups to solve problems or answer questions related to Islamic Religious Education (PAI) material.

Based on this, this study aims to test the hypothesis of the effect of the Brainstorming method that focuses on learning activities as an indicator of the success of Islamic Religious Education (PAI) learning. Thus, this study is entitled: "The Effect of the Brainstorming Method on the Learning Activities of Grade X Students in Islamic Religious Education (PAI) subjects (Research at SMK Al-Kautsar)"

## 2. METHODS

The method used in this study is descriptive quantitative. Quantitative research is a research method that uses numbers and measurements to collect and analyze data (Ardiansyah et al., 2023). According to (Rosyidah & Masykuroh, 2024), descriptive quantitative research aims to identify patterns, characteristics, and correlations between variables through statistical analysis. This study aims to determine the effect of the Brainstorming Method on student learning activities. This study uses two variables, namely the independent variable and the dependent variable, namely the brainstorming method as the independent variable and student learning activities as the dependent variable.

The data analysis techniques used in this study include:

### 1) Instrument Validity and Reliability Testing

According to experts, validity is a measure of the accuracy and precision of a measuring instrument in performing its measuring function. Validity indicates the reliability or validity of a measuring instrument. Meanwhile, Gronlund defines validity as the accuracy produced by test scores or assessment instruments. To test validity, the Pearson Product Moment Correlation method can be used, which correlates each item of the measuring instrument with the total score.

An instrument is said to be valid if it can accurately measure what it is intended to measure and accurately reveal data from the variables being studied. To interpret the data, read the output results or the Sig. (2-tailed) listed in SPSS. The conditions are: if the p-value is  $> 0.05$ , the question item is said to be invalid; if the p-value is  $< 0.05$ , the question item is said to be valid.

According to Zayrin et al., (2025), a reliability test is an index that shows the extent to which a measuring instrument can be trusted or relied upon. Thus, a reliability test can be used to determine the consistency of a measuring instrument, whether the measuring instrument remains consistent when the measurement is repeated. A measuring instrument is said to be reliable if it produces the same results even when measurements are taken repeatedly.

To achieve this, a reliability test was conducted using the SPSS (Statistical Product and Service Solution) 20.0 for Windows program with the Cronbach's Alpha model.

### 2) Data Normality and Linearity Test

The data normality test is intended to show that the sample data comes from a normally distributed population. In this study, data normality was tested using SPSS (Statistical Product and Service Solution) 20.0 for Windows with the following conditions:

(i) Normality testing with SPSS was based on the Kolmogorov-Smirnov test.

- (ii) The significance value was  $\alpha = 0.05$ .
- (iii) If  $\text{sig} > \alpha$ , then the data is normally distributed.
- (iv) If  $\text{sig} < \alpha$ , then the data is not normally distributed.
- (v) Look at the results on the Q-Q-Plot normal diagram for both variables. If the data is around a straight line, then the data is normally distributed.

Data linearity testing aims to determine whether the relationship between two variables is linear or not. In this study, data linearity was tested using the SPSS (Statistical Product and Service Solution) 20.0 for Windows program with the following conditions:

- (i) Linearity was tested using the Test of Linearity at a significance level of 0.05.
- (ii) Two variables are said to have a linear relationship if the Deviation from Linearity significance  $> 0.05$ .

### 3) Hypothesis Testing

In this study, the techniques used to test the hypothesis were correlation testing and regression testing.

#### (i) Correlation Analysis

To measure the strength of the relationship between two variables (the brainstorming method and student learning activities). To test the correlation using the SPSS (Statistical Product and Service Solution) 20.0 for Windows program with the following conditions: If the Sig. (2-Tailed) probability  $> 0.05$ , then  $H_0$  is accepted; if the Sig. (2-Tailed) probability  $< 0.05$ , then  $H_0$  is rejected.

#### (ii) Simple Linear Regression

The purpose of regression analysis is to determine the extent of the influence of the independent variable (brainstorming method) on the dependent variable (student learning activities).

## 3. RESULTS AND DISCUSSION

The ideal score for variable X that can be obtained in this study is  $17 \times 4 \times 20 = 1360$ . After calculation, the score for variable X is 942. Thus, the value of variable X displayed is  $(942:1360) \times 100\% = 69.3\%$  of the expected 100%. This shows that the Brainstorming method is 69.3% effective and is categorized as Good.

The ideal score obtained from variable Y is  $13 \times 4 \times 20 = 1040$ . After calculating the total score for variable Y, it is 728. Thus, the value of variable Y displayed is  $(728:1040) \times 100\% = 70\%$  of the expected 100%. **Table 1** this shows that student learning activities are 70% and categorized as Good.

**Table 1** Coefficients of Determination for Variables X and Y

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.784 <sup>a</sup>	.615	.594	4.78862

a. Predictors: (Constant), VARIABEL\_X

Based on the results of the regression test above, it is known that the coefficient of determination (R Square) value is 0.615 (the value 0.615 is the square of the correlation coefficient or R, which is  $0.784 \times 0.784 = 0.615$ ). The value of the coefficient of determination (R Square) of 0.615 is equal to 61.5%. This means that the Brainstorming method has an effect on student learning activities of 61.5%.

1) Use of the Brainstorming Method in Islamic Education at SMK Al-Kautsar Campaka

The use of the brainstorming method in Islamic Education at SMK Al-Kautsar Campaka has been carried out effectively. Teachers have used the brainstorming method to enhance student learning activities and facilitate their understanding of the subject matter. Based on the results of data analysis, the value of variable X displayed is 69.3% of the expected 100%, with a category of Good.

Based on field observations, it was found that students were more active and involved in the learning process after using the brainstorming method. They were more courageous in expressing their opinions and ideas. This is in accordance with the theory proposed by Osborn (Chang & Li, 2025). That the brainstorming method can increase student involvement and active participation in the learning process.

2) Learning activities of grade X students in Islamic Education at SMK Al-Kautsar Campaka

The learning activities of grade X students in Islamic Education at SMK Al-Kautsar Campaka have increased after using the brainstorming method. Based on the results of data analysis, the value of variable Y shown is 70% of the expected 100%, with a category of Good. This shows that student learning activities have increased after using the brainstorming method.

The results of the study show that students are more active and involved in the learning process and have higher learning motivation. Students also show increased creativity in problem solving and developing new ideas. They are better able to think outside the box and develop innovative solutions.

3) The Effect of Brainstorming Method on Learning Activities of Grade X Students in Islamic Education Subject at SMK Al-Kautsar Campaka

There is a positive and significant effect between the use of brainstorming method and learning activities of grade X students in Islamic Education subject at SMK Al-Kautsar Campaka. Based on the correlation analysis results, the Sig. (2-tailed) value between the Brainstorming Method (Variable X) and Student Learning Activities (Variable Y) is  $0.000 < 0.05$ , which means that there is a significant correlation between variable X and variable Y. The effect of the brainstorming method on student learning activities is 61.5%, while the rest ( $100\% - 61.5\% = 38.5\%$ ) is influenced by other variables outside this regression model or variables that were not studied.

Thus, it can be concluded that the brainstorming method has a positive and significant effect on student learning activities. Therefore, the brainstorming method can be used as an alternative effective learning method to improve student learning activities.

#### 4. CONCLUSION

Based on the results of data analysis, the value of variable X displayed is 69.3% with a good category. This shows that the brainstorming method has been used effectively in the learning process. The learning activities of grade X students in Islamic Religious Education (PAI) subjects at SMK Al-Kautsar Campaka have increased after using the brainstorming method. Based on the results of data analysis, the value of variable Y displayed is 70% with a good category.

There is a positive and significant effect between the use of the brainstorming method and the learning activities of grade X students in Islamic Religious Education (PAI) subjects at SMK Al-Kautsar Campaka. Based on the correlation analysis results, the Sig. (2-tailed) value between the Brainstorming Method (Variable X) and Student Learning Activities (Variable Y) is  $0.000 < 0.05$ , which means that there is a significant correlation between variable X and variable Y. The magnitude of the influence of the brainstorming method on student learning

activities is 61.5%. Thus, it can be concluded that the brainstorming method has a positive and significant effect on student learning activities.

Thus, it can be concluded that the brainstorming method has a positive and significant effect on student learning activities. The strength of this study is its ability to objectively demonstrate the effectiveness of the brainstorming method, while its weakness lies in the limited sample size and narrow research location. Therefore, it is recommended that the brainstorming method be applied in learning and that future research involve a broader sample.

## 5. REFERENCES

- Acharya, B., & Sigdel, S. (2024). Exploring Early Childhood Development Education Through Playful Environment. *Interdisciplinary Journal of Management and Social Sciences*, 5(1), 16–29. <https://doi.org/10.3126/ijmss.v5i1.62659>
- Ardiansyah, Risnita, & M.S, J. (2023). Teknik pengumpulan data dan instrumen penelitian ilmiah pendidikan pada pendekatan kualitatif dan kuantitatif (Pt. 1-9). *Jurnal IHSAN : Jurnal Pendidikan Islam*, 1(2).
- Azumah, K., Septiani, S., Hamidah, S. H., & Susanto, A. (2025). Implementasi ragam metode pembelajaran dalam kegiatan belajar mengajar. *Jurnal Inovasi Pembelajaran Progresif*, 6(2). <https://ejournals.com/ojs/index.php/jipp/article/view/2163>
- Chang, H.-F., & Li, T. (2025). A framework for collaborating a Large Language Model tool in brainstorming for triggering creative thoughts. *Thinking Skills and Creativity*, 56, 101755. <https://doi.org/10.1016/j.tsc.2025.101755>
- Endla, P. (2025). Enhancing student creativity and understanding through brainstorming: An active learning approach. *AIP Conference Proceedings*, 3361(1), 050002. <https://doi.org/10.1063/5.0298122>
- Hidayat, A. S., Badriah, L., Nurmiati, & Maryati, R. (2024). Efektivitas kompetensi profesional guru dalam meningkatkan hasil belajar peserta didik. *Jurnal Pendidikan Sang Surya*, 10(1), 222–234. <https://doi.org/10.56959/jpss.v10i1.191>
- Nur'aini, Tamrin, H., & Masykuri, A. (2024). Inovasi metode pembelajaran berbasis teknologi dalam meningkatkan motivasi belajar siswa. *Journal of Islamic Educational Development*, 1(1), 63–72.
- Rosyidah, E., & Masykuroh, E. (2024). Memahami strategi dan mengatasi tantangan dalam penelitian metode kuantitatif. *Syntax Idea*, 6(6), 2787–2803. <https://doi.org/10.46799/syntax-idea.v6i6.3748>
- Widiastuti, I. A. M. S., Murtini, N. M. W., & Anto, R. (2022). Brainstorming as an effective learning strategy to promote students' critical thinking skills. *Jurnal Pendidikan Progresif*, 12(2), 960–971.
- Zayrin, A. A., Nupus, H., Maizia, K. K., Marsela, S., Hidayatullah, R., & Harmonedi, H. (2025). Analisis instrumen penelitian pendidikan (uji validitas dan reliabilitas instrumen penelitian). *QOSIM: Jurnal Pendidikan Sosial & Humaniora*, 3(2), 780–789. <https://doi.org/10.61104/jq.v3i2.1070>