How to Cite (APA Style):
Baiti, M., Dari, M. W., Maryamah, Bujuri, D. A., Saputra, A. D., Nurlaila & Baharuddin (2025). The effect of the make a match method on students' cognitive learning outcome: an experimental study in islamic education at *madrasah ibtidaiyah*. *Jurnal Ilmiah Pendidikan Dasar*, *12* (2), 302-317. http://dx.doi.org/10.30659/pendas.12.2.302-317

JURNAL ILMIAH
PENDIDIKAN DASAR
p-ISSN: 2354-9580
e-ISSN: 2685-211X

The effect of make a match method on students' cognitive learning outcome at *madrasah ibtidaiyah*

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Submitted: April 07th, 2025 **DOI: 10.30659/pendas.12.2.302-317**
Revised: July 30th, 2025
Accepted: July 31st, 2025

Keywords:
islamic education;
learning outcome;
make a match method

Abstract

This study aims to examine the effect of implementing the Make a Match instructional method on student learning outcomes in the subject of Aqidah Akhlak. Employing a quantitative approach with a quasi-experimental design, the research was conducted with a sample of 47 fifth-grade students at Madrasah ibtidaiyah Ahliyah II Palembang. The experimental group consisted of 23 students from class VD, while the control group included 24 students from class VE. Data collection methods included tests, classroom observations, and documentation. The test instruments were subjected to validity and reliability testing, as well as item difficulty and discrimination index analysis. Data were analyzed using an Independent Samples t-test. The findings indicate the following: (1) Prior to the implementation of the Make a Match method, only 3 students (13%) in the experimental group achieved mastery, while 20 students (86.9%) did not. (2) After the intervention, 16 students (69.6%) in the experimental group reached the mastery level, with 7 students (30.3%) remaining below the threshold. (3) In the control group, which did not receive the intervention, only 7 students (29.2%) achieved mastery, while 17 students (70.7%) did not. (4) Hypothesis testing using the Independent Samples t-test yielded a significance value of 0.000 (< 0.05), indicating a statistically significant difference between the two groups. These results support the conclusion that the Make a Match learning method has a positive and significant impact on student

achievement in Aqidah Akhlak, particularly in enhancing mastery of moral and religious concepts.

INTRODUCTION

Background of the Study

The subject of moral beliefs is one of the lessons that must be given to students at the *madrasah ibtidaiyah* level. This subject aims to form students' knowledge regarding the basics of faith in the six pillars of faith, namely in Allah SWT, faith in angels, faith in the book, faith in the Messenger, faith in the last day, and the last one is Qada and Qadar (Basuki & Febriansyah, 2020). Strengthening students' confidence in believing and carrying out all the commandments of Allah SWT through various worship activities is also formed through this subject. Apart from that, students are also educated on their morals (character) through this subject (Assyifa et al., 2023). Therefore, this subject cannot be taken for granted because it is an important instrument in shaping students' Islamic knowledge, beliefs and character.

The importance of the subject of moral beliefs is the basis for teachers to design effective and enjoyable teaching of moral beliefs. Students must also be used as subjects of learning, not just as objects of learning. This is important to do so that the content of the material regarding faith and character can be understood and practiced well by students. Effective and enjoyable learning is also the key for students to participate and enjoy learning with joy and happiness (Rahmawati, 2022). In this way, students' sense of enjoyment and activeness in participating in learning can have a positive impact on the quality of student learning outcomes (Mulyawati, 2021).

The Problem of The Study

To create effective and enjoyable learning, a learning method is needed that can fully involve students and create a learning atmosphere that is fun and makes students happy (Mahliatussikah et al., 2022). One learning method that contains this quality of learning is the make a match method. This method is a type of cooperative learning. This method uses pairs of cards containing questions and answers where students match each other's pairs of cards (Fiddiniya et al., 2022). The make match method is a fun learning method because there are educational games. Based on the results of a pre-research, at *Madrasah ibtidaiyah* (MI) Ahliyah II Palembang, the 5th Grade grade teacher at this school admitted that he had never applied this method to learning moral beliefs (Interview, 2022). This fact also became the basis for researchers to carry out experiments at the school.

Research's State of the Art

So far, there have been various research results that have been published regarding the make a match method in learning. First, research regarding the application of the make a match method to students' reading interest in elementary schools (Krisdayanti & Kusmariyatni, 2020). Second, research regarding the influence of the make a match method on learning outcomes in social science material in elementary schools. Third, research regarding the influence of the make a match method on learning outcomes in natural science material in elementary schools (Adriliyani et al., 2020; Hendra & Rahayu, 2020). Fourth, research regarding the influence of the make a match method on learning outcomes in mathematics material in elementary schools.

Novelty, Research Gap, & Objective

Referring to various research, the make a match method is generally applied in various general subjects such as mathematics, natural sciences and social sciences. The make a match method is not applied in Islamic religious education materials such as moral beliefs. In fact, make a match is very possible and relevant for use in moral belief subjects. Therefore, this research aims to apply the make a match method to the subject of moral beliefs and measure whether there is an influence of the make a match method on student learning outcomes. This research was conducted at *Madrasah ibtidaiyah* (MI) Ahliyah II Palembang and 5th Grade students were the sample. Based on pre-research, the 5th Grade grade teacher at this school admitted that he had never applied this method to learning moral beliefs (Interview, 2022). This fact also became the basis for researchers to carry out experiments at the school.

METHOD

Type and Design

This type of research is quantitative research with a quasi-experimental approach using the Non Equivalent Control Group model because the samples in the experimental and control classes were not chosen randomly but rather in accordance with the facts and criteria of the researcher's research samples (Miller et al., 2020). This method is used to measure the effect of applying the make a match method on student learning outcomes in the subject of moral beliefs.

Data and Data Sources

This research was conducted by *Madrasah ibtidaiyah* Ahliyah II Palembang. The population in this study was all class V students at MI Ahliyah II Palembang for the

2022/2023 academic year, totaling 164 students. Meanwhile, the research sample consisted of 23 VD class students as the experimental class, and 24 VE class students as the control class.

Data Collection Technique

This research data was obtained through observation, documentation and tests. The test was carried out twice, namely pretest at the beginning of learning and posttest at the end of learning. This test was carried out to measure the achievement of students' cognitive learning outcomes in the subject of moral beliefs. The indicators are Defines an attitude of steadfastness, generosity, and trust; Explaining the attitude of being firm, generous and trusting through the story of the Prophet Ibrahim As; Explaining the characteristics of being firm, generous and trusting; Mention the benefits or advantages of being steadfast, generous and trusting; and Demonstrate examples of steadfast, generous and trustful attitudes through the story of the Prophet Ibrahim As in everyday life.

Data Analysis

The question instrument in this research is in the form of multiple choices. Before being used, the question instrument was tested first and its validity was measured using the Product Moment formula and its reliability using the Cronbach's Alpha formula to determine whether the questions were valid and reliable so they were suitable for use.

Quantitative data on student learning outcomes was analyzed using prerequisite tests and hypothesis testing. The prerequisite tests used are the normality test and homogeneity test. The normality test is carried out using the Kolmogorov Smirnov formula to determine whether the data is normally distributed or not. The homogeneity test is carried out using the homogeneity of variance test formula to determine whether the sample data comes from a population that has the same variance or not. Meanwhile, to measure the effect of the make a match method on student learning outcomes, a T test was carried out using the Independent Sample T-Test formula.

RESULTS

Student Learning Results Before Applying the Make A Match Method in the Experimental Class

In research in the experimental class, data was obtained from pretest results or before the make match method was applied. The experimental class is a class that is given treatment to find out whether there is an influence on student learning outcomes through the make a match method. Pretest is an ability test given to students before being given treatment. The following are the pretest scores or before the make a match method was applied in the experimental class:

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
PretestEksperimen	23	74	13	87	1278	55,57	4,145	19,876	395,075
Valid N (listwise)	23								

Figure 1. Experimental Class Pretest Descriptive Data

Based on the experimental class pretest data obtained using descriptive statistics with the help of SPSS for Windows version 25, it shows that student learning outcomes are categorized as low. This can be seen from the statistical data above that the average pretest score or before applying the make a match method in the experimental class was 55.57, with a minimum score of 13 and a maximum score of 87 with the frequency distribution value for the experimental class as follows:

Table 1. Experimental Class Pretest Data Frequency

Experimental Pretest Frequency		
Pretest Value	**Frequency**	**Percentage**
1-20	1	4,3%
21-30	2	8,7%
31-40	4	17,4%
41-50	4	17,4%
51-60	3	13,0%
61-70	2	8,7%
71-74	4	17,4%
75-80	2	8,7%
81-90	1	4,3%
Total	**23**	**100%**

Based on the table above, it was found that the frequency of students who did not meet the completeness criteria was 20 students with a percentage of 87% and

those who met the completeness criteria were 3 students with a percentage of 13%. This shows that the majority of students obtained scores below the minimum passing standard, 75. The results of the pretest frequency distribution for the experimental class are displayed in the form of a diagram, as follows:

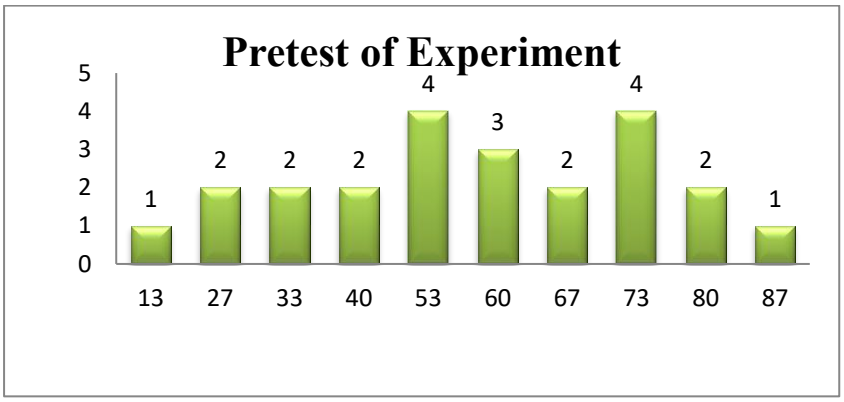

Figure 2. Experimental Class Pretest Frequency Diagram

Student Learning Results After Applying the Make A Match Method in the Experimental Class

After the researchers implemented the make a match method in the experimental class, the researchers discovered the fact that there was a significant increase in student learning outcomes which is described as follows:

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
PosttestEksperimen	23	47	53	100	1854	80,61	2,561	12,280	150,794
Valid N (listwise)	23								

Figure 3. Experimental Class Posttest Descriptive Data

The data above shows that the average posttest score for students in the experimental class is 80.61, with a maximum score of 100 and a minimum score of 53. This data means that there has been an increase in student learning outcomes in the experimental class after applying the make a match method because the average -The average score for the pretest or before the make a match method was applied in the experimental class was 55.57, while in the posttest it increased to 80.61. The frequency distribution values for the experimental class in the posttest are presented as follows:

Table 2. Frequency of Pretest and Posttest Data for Experimental Class

Experimental Posttest Frequency		
Posttest Value	**Frequency**	**Percentage**
1-50	1	4,3%
51-60	2	8,7%
61-70	1	4,3%
71-74	3	13,0%
75-80	5	21,8%
81-90	7	30,4%
91-100	4	17,4%
Total	**23**	**100%**

Based on the table above, it was found that the frequency of posttests that did not meet the completeness criteria was 7 students with a percentage of 30.4% and those who met the completeness criteria were 16 students with a percentage of 69.6%. This shows that student learning outcomes have improved. When displayed in diagram form, the results of the posttest frequency distribution after applying the make a match method in the experimental class are depicted as follows:

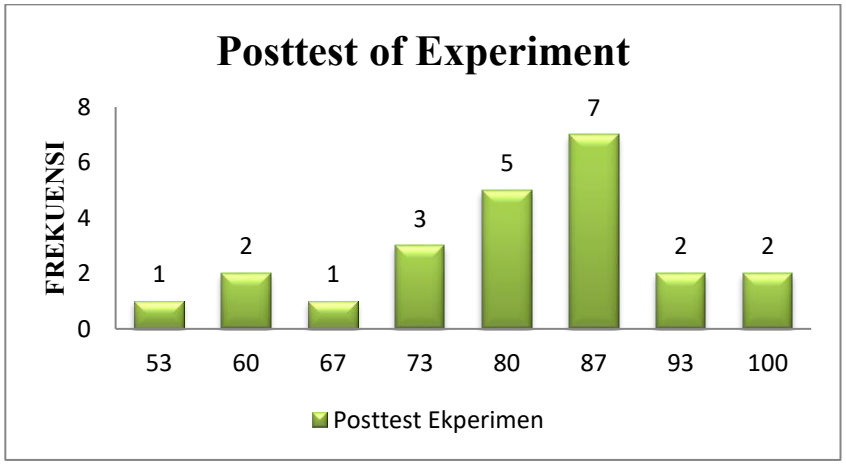

Figure 4. Experimental Class Posttest Frequency Diagram

Student Learning Results in Control Classes That Did Not Apply the Make A Match Method

Apart from the experimental class, researchers also measured scores in the control class where the make a match method was not applied. The student learning outcomes scores on the pretest and posttest are as follows:

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
PretestKontrol	24	47	33	80	1399	58,29	3,005	14,722	216,737
Valid N (listwise)	24								

Figure 5. Control Class Pretest Descriptive Data

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
PosttestKontrol	24	60	27	87	1522	63,42	3,643	17,847	318,514
Valid N (listwise)	24								

Figure 6. Posttest descriptive data for control class

Based on the learning outcome data above, it shows that the average student score on the posttest is 63.42. The maximum student score on the posttest is 87 while the minimum score is 27. If compared, the posttest score for the experimental class is greater than the posttest score for the control class because the average posttest score for the experimental class is 80.61. This data means that the average result Student learning in the experimental class is considered high. The control class frequency distribution values are presented as follows:

Table 3. Frequency Distribution of Pretest and Posttest Control class

Control Pretest Frequency			**Control Posttest Frequency**		
Pretest Value	**Frequency**	**Percentage**	**Posttest Value**	**Frequency**	**Percentage**
1-50	8	28,6%	1-50	4	14,3%
51-60	6	21,4%	51-60	7	25%
61-70	7	25%	61-70	10	35,7%
71-74	5	17,9%	71-74	1	3,6%
75-80	2	7,1%	75-80	3	10,7%
81-90	0	0	81-90	3	10,7%
Total	**28**	**100%**	**Total**	**28**	**100%**

Based on the control class pretest and posttest frequency table above, the frequency in the pretest that did not meet the completeness criteria was 22 students with a percentage of 91.6% and those who met the completeness criteria were 2 students with a percentage of 8.3%. This shows that the pass rate for student learning outcomes is still very low. Meanwhile, the frequency in the control class

posttest that did not meet the completeness criteria was 17 students with a percentage of 70.7% and those who met the completeness criteria were 7 students with a percentage of 29.2%. This also shows that there is no significant change in learning outcomes without implementing the make a match method.

Referring to the data from the recapitulation results of the experimental and control classes above, it is concluded that in the experimental class applying the make a match method, students were able to get the highest score compared to the control class which did not apply the make a match method. This can be seen from the difference in the percentage that meets the minimum completeness criteria (KKM) between the experimental class and the control class. In the experimental class, the percentage of students' scores that met the KKM on the posttest reached 69.6% and the control class only 29.2%. The percentage difference diagram between the experimental class and the control class is as follows:

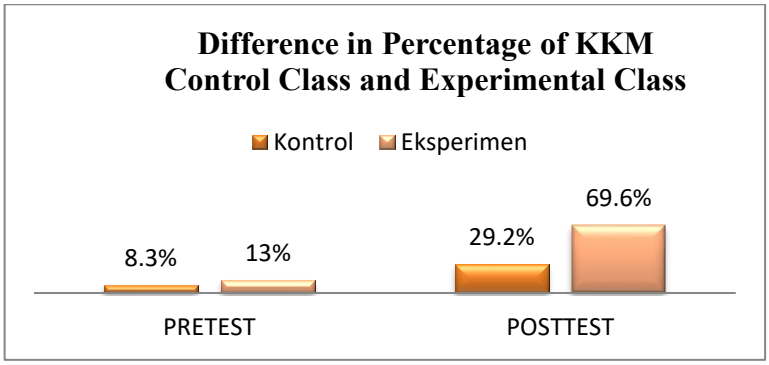

Figure 7. Difference in Percentage of Control Class with Experimental Class

Prerequisite Testing and Hypothesis Testing

Before researchers carry out hypothesis testing (the influence of variable X on Y), researchers carry out prerequisite tests, namely normality and homogeneity tests.

Normality test

This normality test is carried out to find out whether the data is normally distributed or not. In this research, the normality test uses the Kolmogorov Smirnov test using SPSS for Windows 25. The normality test is said to be normal if the significance level (SIG) is > 0.05 while the significance level (SIG) is said to be abnormal (SIG) < 0.05. Following are the results of the normality test:

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	df	Sig.
Hasil	Pretest Eksperimen	,144	23	,200*	,954	23	,355
	Posttest Eksperimen	,177	23	,060	,937	23	,158

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 8. Experimental Class Normality Test Results

Based on the results of the normality test in the Kolmogorov Smirnov column above, the results of the normality test for the experimental class pretest and posttest data can be concluded that the data has a normal distribution for the experimental class pretest with a significance level of 0.200 > 0.05. Meanwhile, the data was also normally distributed for the experimental class posttest with a significance level of 0.060 > 0.05. Normality test results for control class data are obtained as follows:

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	df	Sig.
Hasil	pretest kontrol	,140	24	,200*	,932	24	,111
	posttest kontrol	,174	24	,058	,915	24	,044

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 9. Control Class Normality Test Results

Based on the results of the control class pretest and posttest data normality test above, it can be concluded that the data is normally distributed with a significance of 0.200 > 0.05 in the pretest data, and a significance of 0.058 > 0.05 in the posttest data.

Homogeneity Test

The homogeneity test in this study used the homogeneity of variance test. The following are the results of the homogeneity test for the two research sample groups:

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	1,855	1	45	,180
	Based on Median	1,605	1	45	,212
	Based on Median and with adjusted df	1,605	1	38,849	,213
	Based on trimmed mean	1,841	1	45	,182

Figure 10. Pretest Variant Homogeneity Test Results

Based on the results of data analysis of the pretest variance of the experimental class and control class in the Test of homogeneity of variance based on mean table, the sig value = 0.180 > 0.05, it can be concluded that the data variance in the pretest scores of the experimental class and control class is homogeneous. The calculation of the posttest variance homogeneity test is obtained as follows:

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	2,387	1	45	,129
	Based on Median	1,857	1	45	,180
	Based on Median and with adjusted df	1,857	1	38,385	,181
	Based on trimmed mean	2,276	1	45	,138

Figure 11. Posttest Variance Homogeneity Test Results

The posttest variance data for the experimental class and control class above obtained a value of sig = 0.129 > 0.05, so it can be concluded that the data variance for the posttest scores for the experimental class and control class is homogeneous.

Hypothesis testing

Hypothesis testing in this research uses the Independent Sample T-Test formula. This test aims to find out the answer to whether the hypothesis is accepted or rejected. This test was carried out to measure whether or not there was an influence of the make a match method on students' learning outcomes of moral beliefs. The T test results are presented as follows:

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil	Equal variances assumed	2,387	,129	3,831	45	,000	17,192	4,488	8,154	26,230
	Equal variances not assumed			3,861	40,902	,000	17,192	4,453	8,199	26,185

Figure 12. T-Test Results

Based on the data, the T test value shows that Ha is accepted because sig < 0.05, namely 0.000 < 0.05. This data proves that the application of the make a match method has an effect on students' learning outcomes of moral beliefs.

DISCUSSIONS

This research data shows that the implementation of the make a match method has a positive impact on students' learning outcomes of moral beliefs. The application of the make a match method has an influence on students' mastery of moral belief material. This is proven by the results of the influence test, which obtained a sig score of 0.000 < 0.05, which means that the application of the make a match method has an effect on students' learning outcomes of moral beliefs. This influence can also be seen from the difference in student learning outcomes scores before the make a match method was applied and after the make a match method was applied in the experimental class as above data. Those data show that there has been an increase in student learning outcomes in the experimental class after the make a match method was implemented.

The influence of the make a match method on students' learning outcomes of moral beliefs proves that this method is a method that is quite effective in the learning process (Sulhan, 2020; Viyayanti & Dwikoranto, 2021). This method creates a fun learning atmosphere for students because students are given the opportunity to look for card pairs in the form of questions/answers from the cards they hold (Hutasuhut et al., 2024; Nasution et al., 2022). Through this method, the learning process is integrated with educational games so that students do not experience boredom (Amiruddin et al., 2022; Ningsih, 2023).

This fun learning makes students enthusiastic about participating in the learning process (Bukit et al., 2023). Students enthusiastically participate in learning by thinking actively and critically in looking for relevant questions/answers regarding the material on moral beliefs that are studied continuously. Through these activities, students continuously study the material being studied so that it is easier for students to remember and understand (Rahma & Haviz, 2022). As a result, students can answer the questions given during the assessment.

Referring to this fact, it is important for a teacher to design a pleasant learning atmosphere in the classroom. Enjoyment is a basic need for students to be able to participate in the learning process well, enthusiasm for playing an active role in the learning process, and enthusiasm for studying the material being studied. Without a sense of enjoyment, students experience boredom in participating in learning activities. This feeling of joy is a stimulus for students to enjoy ongoing learning.

These arguments are also strengthened by research findings in the control class. In the control class, a class where the make a match method was not applied,

student learning outcomes were different from student learning outcomes in the experimental class. Posttest results in the control class, the students' average score was 63.42. The maximum student score is 87 while the minimum score is 27. If compared with the posttest score for the experimental class, it is greater than the posttest score for the control class because the average score for the experimental class is 80.61. In the experimental class, the percentage of student scores that meet the standard criteria for completeness the minimum in the posttest reached 69.6% and the control class only 29.2%. The facts of this research show that the application of the make a match method has an effect on improving student learning outcomes.

However, the results of this research also found the fact that the application of the make a match method is not the only indicator of the success of students' learning outcomes of moral beliefs. Even though the application of the make a match method has been proven to have a positive impact on student learning outcomes, the magnitude of the influence of the application of the make a match method is only one aspect. There are other supporting factors, namely personal factors and competencies of students and factors outside of students (Salsabila & Puspitasari, 2020; Simamora et al., 2020). Referring to several research results, student learning success is influenced by various internal factors such as self-confidence, cognitive ability, interest in learning, talent, motivation to learn, and ways of learning (Rafiola et al., 2020; Supena et al., 2021). Meanwhile, external factors such as the family environment, school environment and community environment (Fredy et al., 2022; Trianah & Sahertian, 2020; Zysberg & Schwabsky, 2021).

CONCLUSION

The findings of this study demonstrate that the implementation of the *Make a Match* instructional method positively influences students' learning outcomes in the domain of *Aqidah Akhlak* (moral beliefs). This method fosters an engaging and enjoyable learning environment by involving students in an interactive activity where they match question and answer cards relevant to the subject matter. Such activities reduce monotony and stimulate greater enthusiasm for learning. The dynamic nature of the method encourages students to actively and critically engage with the content, as they search for matching pairs that correspond to the moral beliefs being studied. This repeated engagement with the material enhances students' comprehension and retention, thereby enabling them to respond more accurately during assessments. Nonetheless, while the current study provides evidence of the method's effectiveness,

further research is necessary to quantify the extent of its impact and to explore additional variables that may influence learning outcomes beyond the instructional strategy itself.

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be constructed as a potential conflict of interest.