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Think Talk Write Model Improves Student Learning Outcomes in Islamic Education

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General Background: Effective learning strategies are critical in enhancing student engagement and academic outcomes, particularly in Islamic Religious Education (PAI), which requires both cognitive and affective comprehension. **Specific Background**: The Think, Talk, Write (TTW) model fosters active learning through sequential stages—critical reflection, collaborative discussion, and synthesis in writing. **Knowledge Gap**: Despite its theoretical potential, empirical studies evaluating the TTW model's effectiveness in the context of Islamic education, especially at the junior high school level, remain scarce. **Aim**: This study investigates the impact of the TTW model on students' learning outcomes in PAI at SMP Negeri 16 Bandar Lampung. **Results**: Using a quasi-experimental design with simple random sampling, students in the experimental group (Class A) showed significantly higher achievement compared to the control group (Class C), with an independent t-test significance of 0.006 (<0.05). **Novelty**: This study contributes novel insights by applying the TTW model to Islamic education and assessing its cognitive impact based on Bloom’s taxonomy. **Implications**: The findings suggest that TTW enhances critical thinking, communication, and comprehension in PAI, supporting its adoption as an effective pedagogical strategy in similar educational contexts.

Highlights:

- Enhances students' critical thinking and engagement.
- TTW outperforms conventional teaching methods.
- Fills research gap in Islamic Education strategies.

Keywords: Think Talk Write, Learning Outcomes, Islamic Education, Critical Thinking, Junior High School

Introduction

Education is the main foundation in shaping the character and intellectual ability of students to face the challenges of the times [1]. The success of education is highly dependent on learning outcomes, which reflect the mastery of students' competence over the material taught[2]. In this

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context, improving learning outcomes is the main focus to realize an effective and meaningful learning process, especially in the subject of Islamic Religious Education (PAI) which plays an important role in the moral and spiritual formation of students [3]. Education is all ways carried out by the government of a country to educate the ability of students to excel in their lives [4].

From an Islamic perspective, education is intended to produce people who worship Him, and are able to carry out their duties as servants of Allah and His caliph on earth [5]. Islamic Religious Education (PAI) is one of the subjects that has an important role in shaping the character, morals, and understanding of students' religious values [6]. Through PAI learning, students are not only expected to be able to understand religious concepts theoretically, but also apply them in daily life [7]. Therefore, the quality of the PAI learning process greatly determines the success of the learning outcomes achieved by students[8]. However, the reality on the ground shows that the learning outcomes of PAI in several schools, including at SMP Negeri 16 Bandar Lampung, still do not reach the expected target. One of the reasons is the learning method [9] which tend to be monotonous and less involve critical thinking activities and interaction between students [10]. This condition encourages the need for the implementation of more innovative and participatory learning models to increase learning effectiveness [11].

Learning outcomes are a form of achieving a learning goal or not [12]. Learning outcomes are the acquisition of students' learning values which include three knowledge, namely intellectual, skills, and attitudes [13]. Students will get high learning outcomes if in the learning process teachers and students can work together to achieve learning goals [14]. Teachers apply learning well, such as applying models, methods, media, and evaluation in learning, and students also participate in learning actively and creatively [15]. The achievement and success of a learning process can be seen from the value of learning outcomes obtained by students. High and good learning outcomes mean that the learning process has been successful. However, the low learning outcomes of students indicate that the learning process is not achieved. Low learning outcomes are influenced by two factors, internal factors and external factors [16].

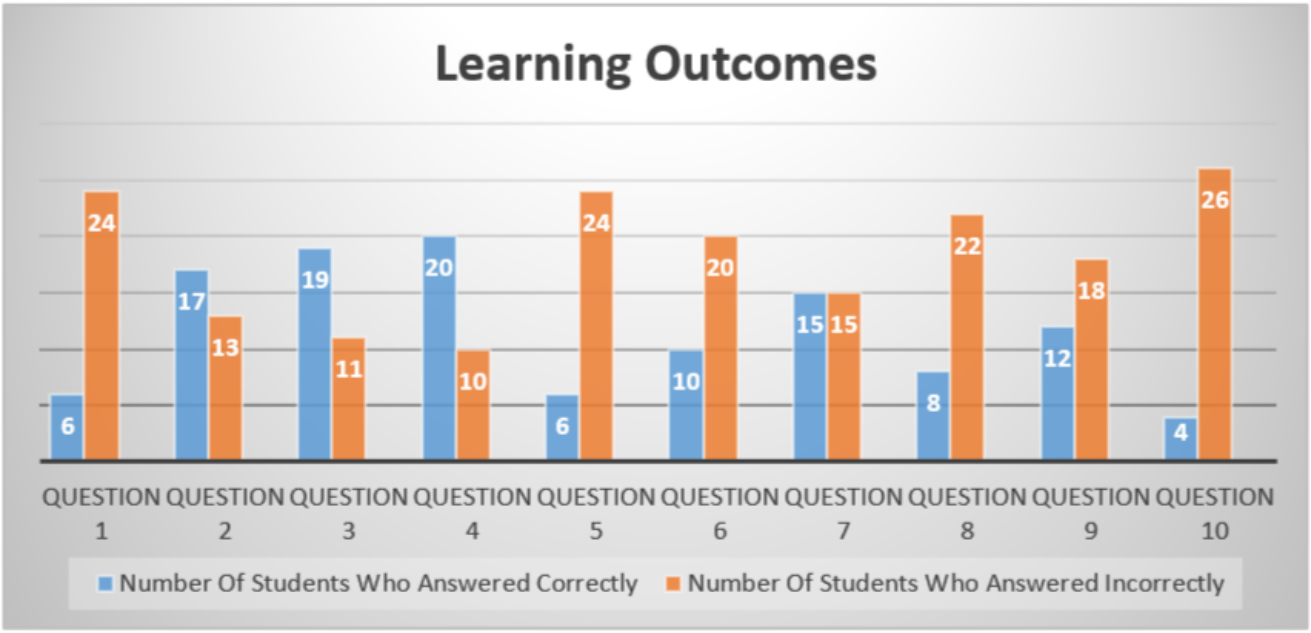

Figure 1. ***Recapitulation of student learning outcomes test in the implementation of pre-research***

Based on the pre-research recapitulation of the learning outcomes that have been presented, it

shows that the learning outcomes of students are still relatively low and have not reached the Minimum Completeness Criteria (KKM) [17]. The bloom taxonomy used on the dimensions of cognitive processes consisting of remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5) and creating (C6) [18]. The learning outcome aspect used in this study is the cognitive aspect, namely measuring students' intellectual abilities and intelligence [19]. The cognitive level that will be used in this study is C1-C6 [20]. The data on the "Learning Outcomes" graph shows the comparison of the number of students who answered correctly and incorrectly for each question on the PAI learning outcome test of students at SMP Negeri 16 Bandar Lampung after the implementation of the TTW learning model (*Think, Talk, Write*). It can be seen that for most of the questions, the number of students who answered incorrectly was higher than those who answered correctly. Quantitatively, question 10 had the highest number of incorrect answers (26 students) and the lowest correct answers (4 students), indicating that these questions may be more difficult or poorly understood by students. On the other hand, question 4 had the highest number of students answering correctly (20 students) with relatively low errors (10 students). This indicates a variation in the level of difficulty of the questions and students' understanding of the material [21].

Empirically, the TTW learning model has been extensively researched and proven to improve student learning outcomes [22] by facilitating the critical thinking process (*Think*), discussion or active communication (*Talk*), and strengthening understanding through writing (*Write*) [23]. Study by [24] In the context of this data, although there are still many questions that are answered incorrectly, the existence of students who are quite significant in answering correctly shows an increase in understanding compared to conventional learning methods. However, further evaluation of questions with a high error rate is needed so that the TTW method can be maximized for all aspects of learning [25]. Thus, this data illustrates that the TTW learning model contributes positively to PAI learning outcomes [26], but also demands improvements and adjustments to the material or method so that the results are more even and optimal.

TTW learning model (*Think, Talk, Write*) is one of the approaches designed to increase the active involvement of students in the learning process [27]. This model combines three important stages, namely critical thinking (*Think*) [28], discuss or express ideas orally (*Talk*) [29], and expressing understanding through writing (*Write)* [30]. Through these stages, TTW is expected to be able to improve students' cognitive and communication skills so that it has a positive impact on learning outcomes [31]. In addition, the TTW model is also able to increase students' motivation to learn because the learning process becomes more interactive and participatory [37]. Research by Wu et al., (2015) show that learners feel more active and challenged to put their ideas forward in group discussions before putting them into writing. This is very relevant in PAI learning which requires a deep understanding and the ability to critically internalize religious values [39]. The Think, Talk, Write (TTW) model aligns seamlessly with the 21stcentury learning agenda, which emphasizes collaboration, literacy, and critical thinking. In the “Think” phase, students cultivate higherorder thinking skills; during the “Talk” phase, they collaborate in smallgroup discussions to coconstruct understanding; and in the “Write” phase, they refine their ideas, thereby strengthening critical thinking and written communication skills. This active approach is particularly relevant in Islamic Religious Education (PAI) because it facilitates the deep internalization of Islamic values students not only receive content passively but also process and apply teachings within the context of their own lives.

Several studies have shown that the *Think, Talk, Write* (TTW) is effective in improving students' critical thinking skills and learning outcomes [40]. Research by Gustina [41] found that students who applied TTW were significantly able to organize ideas better than traditional methods. In addition, a study by [42] indicates that the group discussion is in the stage *Talk* Improve an in-depth understanding of concepts before writing. However, most of the research still focuses on the primary to secondary school levels, with little attention to the application of TTW at the education level [43]. However, have consistently reported improvements in students’ writing and critical thinking skills following the implementation of TTW. However, the majority of these studies have focused primarily on general cognitive domains and written literacy, without examining affective

domains such as motivation, attitudes, or the internalization of religious values within the context of Islamic Religious Education. Therefore, further research is needed to explore how TTW influences students' affective and spiritual dimensions in PAI instruction. Research on the application of the TTW model in PAI learning at SMP Negeri 16 Bandar Lampung is still very limited. In fact, the characteristics of students and the school context can affect the success of this learning model. Therefore, this research is important to be carried out as an effort to explore the effectiveness of TTW in the context of PAI learning in the school.

The urgency of this research is based on the need to improve the learning outcomes of Islamic Religious Education (PAI) at SMP Negeri 16 Bandar Lampung through an effective learning approach. TTW learning model (*Think, Talk, Write*) is a strategy that can stimulate the active involvement of students in the learning process [44], so that it has the potential to improve understanding and learning outcomes[45]. Empirical studies by [46] shows that the application of the TTW model significantly increases the motivation and learning achievement of students in religious subjects. Therefore, this study is important to test the effectiveness of the TTW model on PAI learning outcomes at SMP Negeri 16 Bandar Lampung as an effort to improve the quality of learning and student achievement. This study aims to find out how much the TTW learning model affects the learning outcomes of PAI students at SMP Negeri 16 Bandar Lampung. It is hoped that the results of this research can make a practical contribution for teachers in choosing the right learning strategies and for the development of the quality of PAI education in general.

Although the Think, Talk, Write (TTW) learning model has been widely implemented across various educational levels and has proven effective in enhancing students' critical thinking skills and learning outcomes, most previous studies remain limited to its general application at the elementary and secondary levels. These studies tend to focus on the technical aspects of implementing TTW and its general results, without specifically examining its effectiveness in the subject of Islamic Religious Education (PAI), particularly within the context of junior high schools such as SMP Negeri 16 Bandar Lampung. Moreover, there is a lack of research that links the implementation of the TTW model with the achievement of cognitive domains based on Bloom's taxonomy comprehensively from levels C1 to C6 in PAI learning. Therefore, there is a pressing need for more in-depth research that evaluates the effectiveness of TTW within specific contexts and subject matter, in order to provide empirical contributions to improving the quality of PAI instruction in secondary education.

Method

This study uses a quantitative approach with a quasi experimental design, precisely the *Posttest-Only Control Group Design* model. This design was chosen to objectively determine the effectiveness of the *Think Talk Write* (TTW) learning model on student learning outcomes, by comparing *the post-test* scores between two groups: the experimental class and the control class. The experimental class received learning using the TTW model, while the control class used conventional learning methods. The learning process begins with the teacher introducing the topic to be studied, then students are given time to think independently for a few minutes. This stage aims to stimulate initial thinking and build a basic understanding of the material.

Next, students enter the Talk stage by discussing their ideas or thoughts in small groups. This discussion aims to enrich ideas, deepen understanding, and build cooperation between students. The teacher plays the role of a facilitator who directs the discussion to remain focused and participatory. After the discussion took place, students then proceeded to the Write stage, which is to write the results of their discussion systematically in the form of answers or written reports. This writing activity helps students rearrange their understanding in the form of a structured narrative or answers, as well as practice academic writing skills.

During the learning process with this TTW model, the researcher actively observed the involvement of students, especially in terms of high-level cognitive abilities based on Bloom's taxonomy, namely

C3 (applying), C4 (analyzing), C5 (evaluating), and C6 (creating). The activities in TTW are designed to encourage students to think critically, have active discussions, and express their understanding through writing. This model is expected to help students understand concepts more deeply and be able to apply them to new situations that are relevant to real life and learning contexts.

To measure students' learning outcomes, the researcher prepared a test instrument in the form of multiple-choice questions as many as 12 questions, which were focused on the cognitive level C3 to C6. After testing and analyzing the question items, 5 valid questions were obtained. This instrument also shows a fairly good level of reliability with an *Alpha Cronbach* coefficient value of 0.709, which indicates that these questions are quite consistent and reliable in measuring student learning outcomes. The five valid questions were then used in *post tests* in the experimental class and the control class to measure the extent of the influence of the TTW model on the achievement of student learning outcomes.

In the data analysis process, the researcher first conducted a prerequisite test, namely a normality test using the Liliefors method. After conducting the Shapiro–Wilk test, the results indicated that data from both groups were not normally distributed, so a nonparametric Mann–Whitney U test was performed. The Mann–Whitney U was chosen because the Shapiro–Wilk normality test yielded significance values below 0.05 for both groups, indicating a violation of parametric test assumptions; it is the appropriate nonparametric method for comparing two independent groups with nonnormal distributions. Homogeneity test using the Bartlett test, to ensure that the data obtained met the requirements of parametric statistical analysis. After the prerequisite test is met, a t-test *(independent sample t-test*) is carried out to find out if there is a significant difference between the learning outcomes of students in the experimental class and the control class. This test aims to test the hypothesis that the application of *the Think Talk Write* learning model is able to improve students' learning outcomes, especially in the high-level cognitive domain. Thus, the results of this study are expected to make an empirical contribution to the use of the TTW model as an effective learning strategy in the classroom.

Results and Discussion

A. Results

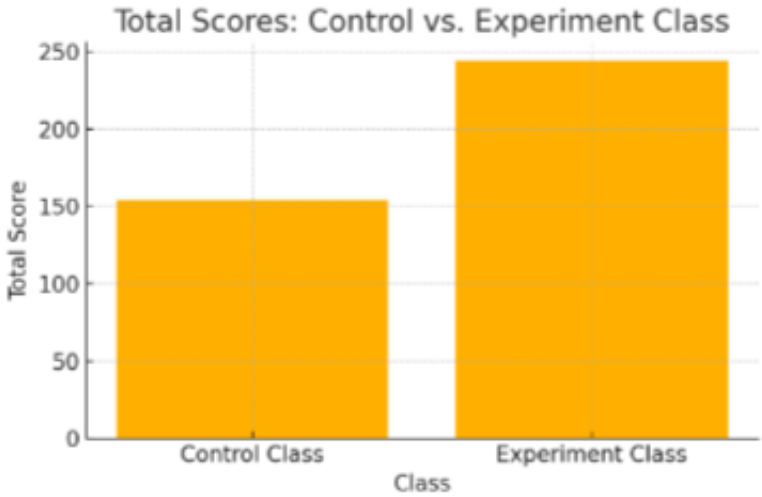

Figure 2. ***A bar chart comparing the total scores of the two classes.***

The bar chart illustrates that the total posttest score of the experiment class (244) is substantially higher than that of the control class (154), confirming the effectiveness of the TTW model in

enhancing PAI learning outcomes. This nearly 60% increase aligns with the statistical test (p = 0.006), which demonstrated a significant difference between the two groups. The “Think” phase primes students cognitively, the “Talk” phase deepens understanding through collaboration, and the “Write” phase reinforces retention and criticalthinking skills via written expression. However, this visualization is based on total scores without accounting for perstudent averages or standard deviations, so future studies should examine individual score distributions to provide a more comprehensive picture.

In this study, it was carried out with various data collection techniques with the distribution of tests in the form of multiple-choice questions in accordance with the indicators of learning outcomes which were then tested for validity and reliability. The following are the results of the data obtained through the reliability test.

Reliability Statistics	
Cronbach’s Alpha	N of Items
.709	12

Table 1. ***Description of Reliability Test Results of Trial Class***

The reliability statistical data displayed showed a *Cronbach's Alpha* value of 0.709 with a total of 12 items. *Cronbach's Alpha* value shows that the instrument used in the study has a fairly good level of reliability and is reliable to measure the variable in question, namely the effectiveness of the TTW (*Think, Talk, Write*) learning model on the PAI learning outcomes of students at SMP Negeri 16 Bandar Lampung.

Normality tests are used to see whether the data collected is declared to be normally distributed or not. The data is declared normal if the significance value > 0.05. The following are the data from the normality test results in the study:

Tests of Normality							
	Kelompok	Kolmogorov-Smirnov a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Data	1.00	.412	27	<,001	.701	27	<,001
	2.00	.289	21	<,001	.812	21	.001
a. Lilliefors Significance Correction							

Table 2. ***Description of Normality Test Results***

Tests of Normality							
	Kelompok	Kolmogorov-Smirnov a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
	Data	1.00	.412	27	<,001	.701	27
		2.00	.289	21	<,001	.812	21
Lilliefors Significance Correction							

Table 3.

The data showed the results of the normality test as seen from *the Shapiro Wilk* table, in two data groups with different sample sizes (df = 27 and df = 21). The study used *the Shapiro Wilk test,* because the sample used was 50 students. The results of *the Shapiro Wilk* test showed very small significance values, namely <0.001 and 0.001, also below 0.05, which corroborated the

conclusion that the data was not normally distributed. In other words, based on the results of *the Shapiro Wilk* test, the data on student learning outcomes in the study on the effectiveness of the TTW (*Think, Talk, Write) learning model* at SMP Negeri 16 Bandar Lampung does not meet the assumption of normality. Because the data was not normally distributed, the researcher conducted a non-parametric test using *the Mann-Whitney U* test.

Test Statistics a	
	PAI Learning Outcomes
Mann-Whitney U	129.000
Wilcoxon W	360.000
Z	-3.306
Asymp. Sig. (2-tailed)	.001
a. Grouping Variable: Class	

Table 4. ***Description of the Mann-Whitney U test results***

Based on table 3, it is known that Asymp. Sig. (2-tailed) is 0.001 < 0.05. Therefore, it can be concluded that the data from *the post test* results show a significant difference between the experimental class that uses the *Think, Talk, Write* model and the control class that uses the conventional model.

1. Homogeneity Test

The homogeneity test is used to determine the diversity of the same (homogeneous) or unequal (non-homogeneous) research population. Based on the provisions of the homogeneity test, with a significant level of 0.05 the data is considered homogeneous. A recapitulation of the homogeneity test results for the control class and the experimental class is presented in the following figure.

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Data	Based on Mean	.621	1	46	.435
	Based on Median	1.746	1	46	.193
	Based on Median and with adjusted df	1.746	1	45.829	.193
	Based on Trimmed Mean	1.065	1	46	.307

Table 5. ***Description of Homogeneity Test Results***

The data in the table "*Tests of Homogeneity of Variances*" shows that the results *of the Levene* test to test the homogeneity of variance from the data group show: The significance value (Sig.) for the four Levene test methods based on the mean, median, median with adjusted df, and trimmed mean in a row is 0.435. Since the significance value is greater than 0.05, it can be concluded that the variance between groups is homogeneous. This means that the assumption of homogeneity of variance is fulfilled in this study.

2. Independent Test ***Sample T-Test***

The *independent sample t-test* in this study was used to test the final ability of the sample. The testing procedure is as follows. To test the above hypothesis, the writing in this study uses the *variant pooled test* formula .

Tests of Homogeneity of Variances (Uji Homogenitas - Levene's Test)

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Independent Samples Test										
		Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)	t-test for Equality of Means		95% Confidence Interval of the Difference	
		F	Sig.				Mean Difference	Std. Error Difference	Lower	Upper
Data	Equal variances assumed	.621	.435	2.861	46	.006	.65608	.22935	.19443	1.11774
	Equal variances not assumed			2.750	35.222	.009	.65608	.23860	.17181	1.14036

Table 6. ***Description of Independent Sample Test Results***

Based on the results of the Independent Samples T-Test analysis, the data from the *Independent Samples Test* in the table shows a comparison of the effectiveness of the TTW (*Think, Talk, Write) learning model* on the learning outcomes of Islamic Religious Education (PAI) students at SMP Negeri 16 Bandar Lampung. Based on *Levene's Test* for similarity of variance, an F value of 0.621 with a significance of 0.435 (>0.05) indicates that the variance of the two groups is homogeneous or the same. Therefore, the interpretation of the t-test resultsuses the line "*Equal variances assumed*". The results of the *t-test* showed a significance value (2-tailed) of 0.006 (<0.05). This indicates that there is a statistically significant difference between the PAI learning outcomes in the group using the TTW learning model and the control group using the learning used by the teacher.

The Think, Talk, Write *learning model* is a learning model that encourages active thinking, effective participation in learning, being able to express opinions, and respecting other people and can train students to write the results of their discussions systematically. The Think, Talk, Write *learning model* is built through the process of thinking, speaking, and writing. The flow of *Think, Talk, Write* progress begins with the involvement of students in thinking or dialogue with themselves after the reading process. Next, talk and share ideas (*sharring*) with your friends before writing. By applying these three main components, it is hoped that students will have the ability to think critically which has five indicators, including analysis skills, synthesis skills, skills in understanding and solving problems, inference skills, evaluation and assessment skills which later students can be fully involved in the learning process, so that they can improve student learning outcomes.

Empirically, these results are consistent with previous research that shows that the TTW learning model can improve students' understanding and learning outcomes. Study by Nasrudin [51] stated that the TTW method is able to improve students' learning activities and critical thinking skills, so that it has a positive impact on learning outcomes. In addition, research by Rizal [52] It also corroborates that the TTW model is effective in increasing interaction and collaboration between students, which ultimately improves learning outcomes. Although there have been many studies that have examined the application of *Think, Talk, Write,* in education, there are still some limitations in understanding the impact on the learning outcomes of Islamic Religious Education specifically. Many studies have not focused on *learning output, still focusing on the skills of implementing the Think, Talk, Write learning process***.** In addition, it has not used specific application domains and does not integrate new motivational concepts such as gamification to see the impact of learning outcomes. Therefore, this study aims to fill this gap by conducting structured and comprehensive experiments. It is hoped that this research can provide in-depth insights into how the learning model *Think, Talk, Write,* can be optimized to improve the quality of students' Islamic religious education learning outcomes.

This research has several important implications. Theoretically, the results of this study support the constructivist theory which emphasizes that students will understand the material better if they are

actively involved in the process of thinking, discussing, and writing. The TTW model is a concrete form of the application of the theory in PAI learning which requires a deep understanding and internalization of religious values. From the practical side, teachers can use the TTW model as an alternative learning strategy to improve student learning outcomes. This model encourages active engagement, improves critical thinking skills, and strengthens students' writing skills. Policy-wise, these findings can be used as a consideration for schools and education stakeholders to integrate the TTW model in teacher training and curriculum development. Meanwhile, academically, the results of this study open up space for further research, especially those that examine the application of the TTW model to affective and psychomotor aspects, as well as its application in various educational contexts and other subjects. Thus, it can be concluded that the TTW learning model has proven to be effective in improving the learning outcomes of PAI students at SMP Negeri 16 Bandar Lampung, as supported by statistical analysis and empirical studies.

This study acknowledges several limitations that may have influenced the findings. First, the sample size was relatively small, which may limit the generalizability of the results to broader populations. Second, the duration of the intervention was short, potentially affecting the depth of behavioral and attitudinal changes observed in students. Third, uncontrolled variables such as students’ intrinsic motivation, prior knowledge, or external support may have impacted learning outcomes. Recognizing these limitations adds transparency to the research and encourages future studies to address them for more robust conclusions.

The Think, Talk, Write (TTW) learning model significantly improves student learning outcomes because it engages learners in a structured process of critical thinking, collaborative discussion, and reflective writing. Firstly, the "Think" phase encourages students to activate prior knowledge and engage in initial mental processing of the subject matter. This stage stimulates cognitive awareness and prepares students to interact more meaningfully with the content. Secondly, during the "Talk" stage, students discuss their ideas in groups, which enhances understanding through peer-to-peer interaction, clarification of concepts, and exchange of diverse perspectives. This social learning component not only reinforces knowledge but also builds communication skills and boosts learning motivation. Lastly, the "Write" phase requires students to organize their thoughts and express their understanding in written form. This stage helps consolidate learning, encourages deeper processing of information, and enhances long-term retention. Writing also serves as a form of self-assessment, enabling students to reflect on what they have learned. In this study, statistical evidence showed a significant difference in learning outcomes between the experimental group using TTW and the control group using conventional methods (p-value = 0.006). This confirms that the active, collaborative, and reflective nature of TTW supports higher-order thinking and leads to improved cognitive achievement across various levels of Bloom’s taxonomy (C3–C6).

Conclusion

Based on the results of research conducted on the effectiveness of the Think, Talk, Write (TTW) learning model on the learning outcomes of Islamic Religious Education (PAI) at SMP Negeri 16 Bandar Lampung, also experienced an increase of 90 points. It can be concluded that the TTW model significantly has a positive influence on improving student learning outcomes. This is proven by the Independent Sample T-Test which shows a significance value of 0.006, which means that there is a significant difference in learning outcomes between students who use the TTW model and those who use conventional learning methods. The TTW model, which consists of three stages of thinking, talking, and writing, has been proven to be able to improve students' critical thinking skills, communication skills, and conceptual understanding of PAI materials. Thus, this learning model is worthy of being used as an alternative strategy in improving the quality of the learning process and student learning outcomes, especially in PAI subjects. This study is limited by its exclusive focus on the cognitive domain using multiplechoice tests, thereby not fully capturing students’ affective and psychomotor dimensions. Future research could develop more holistic assessment instruments and explore the integration of gamification elements to further enrich the application of the TTW model across diverse learning contexts.

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