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The PQ4R Learning Model (Preview, Question, Read, Reflect, Recite, Review): Measuring Its Effectiveness on Students' Learning Outcomes

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ABSTRACT

This study aims to examine the effect of the PQ4R learning model on students' learning outcomes at the cognitive levels of analysis (C4) and evaluation (C5). Employing a quantitative approach with a quasi-experimental posttest-only control group design, Samples were selected through simple random sampling. Class VIII.1 was assigned as the experimental group receiving the PQ4R learning model, while class VIII.7 served as the control group with conventional instruction. The research instrument was a 15-item multiple-choice test validated for validity and reliability. Data analysis began with assumption testing for normality and homogeneity. Levene's test indicated an F-value of 1.184 with a significance of 0.281, confirming homogeneity of variance between groups. The hypothesis was tested using an independent samples t-test, yielding a t-value of 5.343 with 59 degrees of freedom and a significance level of 0.001 ($p < 0.05$), indicating a statistically significant difference between the groups' mean scores. The mean difference of 1.62366 with a 95% confidence interval ranging from 1.01309 to 2.23168 further supports this result. These findings conclude that the PQ4R learning model significantly improves students' analytical and evaluative thinking skills. Therefore, the PQ4R model is recommended as an effective instructional strategy for enhancing higher-order cognitive learning outcomes.

1. Introduction

Education is a lifelong journey aimed at optimizing an individual's potential. Through education, a person not only acquires knowledge and skills but also internalizes moral, ethical, and social values essential for engaging with society (Purwanto, 2021). Education plays a vital role in shaping character, improving quality of life, and driving a nation's development. Whether through formal education in schools or informal learning within communities, every individual has the right to access opportunities for learning and personal growth (Aziz & Zakir, 2022). Education is also crucial for the personal development of every individual.

With quality education, a person can contribute meaningfully to improving their own life, their family, and the surrounding community (Adijaya, 2023). Education is essential for children, adults, and society as a whole. Through education, individuals gain an understanding of their surroundings and strive to make them better. Therefore, it is crucial to understand learning outcomes within the context of education, particularly in Islamic religious education (Peng & Fu, 2021; Rizkianti et al., 2024; Yandi et al., 2023).

Through reading, understanding, and continuous learning, humans can acquire knowledge. To assess the extent of this learning, learning outcomes play a crucial role in the teaching and learning process by providing teachers with data on students' progress toward achieving learning objectives (Harefa et al., 2023; Kusumawati, 2020; Rusidik et al., 2023). Learning outcomes indicate how well an individual has mastered the material taught. These outcomes are typically expressed in the form of numbers or letters earned by students after taking tests or exams administered by the teacher (Ali, 2022; Olateju Temitope Akintayo et al., 2024; Setyorini & Wulandari, 2021).

Learning outcomes are essential skills in the learning and educational process because they relate to achievements in attaining abilities aligned with specific planned objectives (Kang & Kim, 2021; Purnamaningsih, 2022). Learning outcomes in Islamic religious education serve as indicators of success in instilling the principles of faith and obedience to Allah SWT in students. These learning outcomes encompass not only the cognitive aspect (knowledge) but also the affective aspect (behavior and values) (Alifah & Selaras, 2024; Lisdiana et al., 2021; Suyantik, 2021). Effective learning should encourage students to actively engage in understanding and internalizing the lesson material, thereby improving the quality of their learning outcomes (Budianti et al., 2023; Rusidik et al., 2023; Ulfah et al., 2021).

In the context of Islamic Religious Education (PAI), an effective learning model should not only focus on knowledge but also prioritize deep understanding as well as the formation of attitudes and behaviors aligned with religious teachings. The PQ4R model is an approach that can support the improvement of learning outcomes by actively engaging students in the learning process through structured steps, which are expected to enhance cognitive comprehension and deepen their learning experience (Anggraeni et al., 2023; Miranda et al., 2023; Risalahwati et al., 2020). In the learning process, the PQ4R model is used effectively to enhance the quality of learning, resulting in a deeper understanding of Islamic Religious Education (PAI) material while promoting the internalization of religious values in students' lives (Triandono, 2021; Wahyuni, 2022).

Based on the preliminary research conducted on January 9, 2025, involving observations and interviews with Mr. Selamat Riyadi, S.Ag., an Islamic Religious Education teacher at SMP Negeri 5 Bandar Lampung, several issues were identified in the implementation of Islamic Religious Education teaching. The problems include: (1) varying levels of student understanding of the material, which may contribute to low learning outcomes in the PAI subject; (2) the use of

conventional teaching models, which may cause students to feel bored and less engaged during lessons; (3) inadequate facilities and infrastructure leading to underutilization of technology, resulting in reliance on printed textbooks and limited variation in teaching methods; (4) lack of student motivation, causing poor concentration and reluctance to learn; and (5) ineffective classroom management, which leads to students not paying attention to the teacher's explanations and even feeling sleepy during lessons.

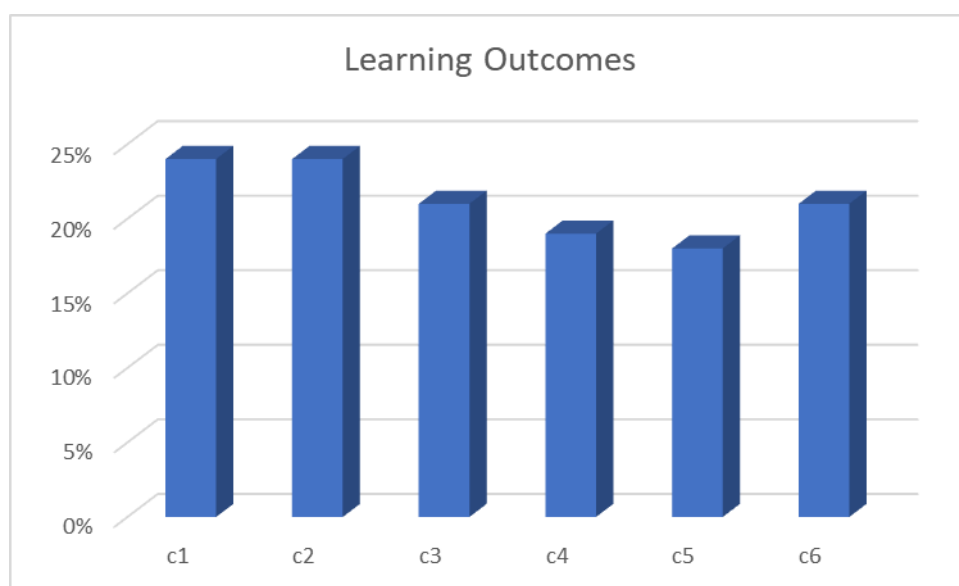


Figure 1. Summary of Student Learning Test Results During The Preliminary Research Implementation

In Bloom's Taxonomy, the cognitive domain consists of six levels: C1 (remember), C2 (understand), C3 (apply), C4 (analyze), C5 (evaluate), and C6 (create) (Hidayati, 2024). At SMP Negeri 5 Bandar Lampung, students are expected to achieve the required cognitive levels in order to attain learning outcomes above the Minimum Mastery Criteria (KKM). In the subject of Islamic Religious Education (PAI), student performance in the cognitive domains of C4 (analyzing) and C5 (evaluating) is still relatively low. One of the factors contributing to these low outcomes is the use of conventional teaching models. This highlights the need to adopt instructional models that foster a more interactive learning environment, enabling students to take a more active role in the learning process. The application of interactive learning models is crucial in determining the quality of instruction and has a significant impact on students' learning outcomes. Bloom's Taxonomy is a learning theory widely applied in education, consisting of six hierarchical levels: C1 to C6. These levels include remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5), and creating (C6) (Rofiq, 2024).

In the classroom learning process, teachers also need to implement more creative teaching models to make lessons more engaging and less monotonous. One such model that can be applied is the PQ4R learning model (Sabrini, 2021). The PQ4R learning model holds great potential for improving students' learning outcomes.

(Adolph, 2023) According to Supriya, the PQ4R learning model (Preview, Question, Read, Reflect, Recite, Review) is a learning approach that is part of the cooperative learning method, aimed at enhancing students' comprehension and retention of the material they read through the processes of reading and writing (Khasanah et al., 2022; Sartika & Hadi, 2021). According to Trianto, the PQ4R learning model is an effective instructional strategy for enhancing reading skills and understanding of the material (Waluya, 2023). Therefore, the implementation of the PQ4R learning model is expected to help students enhance their learning abilities in a more effective and cooperative manner (Sutini et al., 2022; Taher & Alshuon, 2023; Yenti, 2020).

The research conducted by Harahap (2023), Albar (2022), Muharromah (2020), Akhfar (2020) and Fajri (2024) It states that the implementation of the PQ4R learning model has proven to be effective in improving students' learning outcomes. Most studies on the PQ4R model have focused on its application in subjects such as science, mathematics, or language (Desi & Hani, 2020; Sumarti, 2022), Meanwhile, the implementation of this model in the subject of Islamic Religious Education (PAI) has not been widely explored. PAI is characterized by content that is based on values, norms, and beliefs, which distinguishes it from other subjects. Therefore, this study aims to examine how the PQ4R model can be adapted or modified to enhance students' understanding of religious teachings and moral values (Muhibbuddin et al., 2021; Rohmah, 2022).

This study specifically applies the PQ4R learning model in the subject of Islamic Religious Education (PAI) at the junior high school level (aqsa, 2024) Where the implementation of this model in the context of Islamic Religious Education (PAI) is still relatively limited. This study not only measures cognitive learning outcomes (knowledge) but also assesses affective learning outcomes, such as changes in students' attitudes, values, and behaviors in internalizing Islamic teachings (Supratiwi, 2024; Theis & Junita, 2021). This adds a new dimension to measuring the effectiveness of the PQ4R model, which is usually focused solely on mastery of the material. This study also compares the effectiveness of the PQ4R model with other learning models, providing empirical evidence on whether PQ4R is more effective in improving learning outcomes in Islamic Religious Education (PAI) compared to commonly used teaching methods (Herlina, 2020).

The PQ4R learning model offers an effective solution to improve students' learning outcomes, especially in the subject of Islamic Religious Education (PAI). (Jusrianti, et al.; 2021). This model emphasizes the active involvement of students in the learning process through structured steps, beginning with Preview (introducing the material), Question (formulating questions to stimulate curiosity), Read (reading with focus), Reflect (reflecting and connecting the material with prior knowledge), Recite (verbally repeating the material to reinforce understanding), and Review (summarizing and reviewing the material) (Istiqomah & Juansah, 2024; Zupita et al., 2021). The strength of the PQ4R model lies in its ability to encourage students to actively think, recall, and connect the concepts they learn with real-life situations, which is especially relevant in Islamic Religious Education (PAI) that involves moral values (Artuti, 2023; Elvi, 2024). The advantage of this model is that it not

only enhances cognitive learning outcomes (knowledge) but also develops students' affective abilities, such as strengthening religious attitudes and values in daily life (Kalawen & Wahyuningsih, 2022; Zaini et al., 2022.) Thus, PQ4R provides a deeper and more comprehensive learning experience, resulting in better understanding and improved student learning outcomes. This research aims to examine the effect of the PQ4R learning model on students' learning outcomes at the cognitive levels of analysis (C4) and evaluation (C5).

2. Methodology

This study employs a quantitative approach with a quasi-experimental design, which is an experimental design used in situations where full randomization of research subjects is not feasible. The design applied is a posttest-only control group design, where two groups are compared: an experimental group receiving the PQ4R learning model treatment and a control group receiving conventional instruction. The objective of this research is to determine the effect of the PQ4R learning model on students' learning outcomes, particularly at the cognitive levels of C4 (analysis) and C5 (evaluation).

The study was conducted at SMP Negeri 5 Bandar Lampung during the even semester of the 2024/2025 academic year. The population consisted of all eighth-grade students, totaling 281 students across nine classes. Samples were selected randomly using simple random sampling. Based on the draw, class VIII.1 was designated as the experimental group, and class VIII.2 as the control group. Each class underwent instruction according to their assigned treatment and subsequently took the same posttest to measure learning outcomes.

The PQ4R learning model (Preview, Question, Read, Reflect, Recite, Review) was implemented in six stages. The Preview stage guided students to skim the material to identify the main ideas. The Question stage required students to formulate questions based on the reading. During the Read stage, students actively read and answered the questions they created. The Reflect stage encouraged students to relate the material to problem-solving contexts. In the Recite stage, students restated the material using their notes. Finally, the Review stage involved revisiting key concepts and deepening understanding where confusion remained.

3. Result and Discussion

In this study, various data collection techniques were employed, including the administration of multiple-choice tests aligned with the learning outcome indicators, which were then tested for validity and reliability. The following is the data obtained from the reliability test.

Table 1. Description of the Validity Test Results for the Trial Class

| No | R_{table} | R_{count} | Information |
|----|-------------|-------------|-------------|
| 1 | 0,3610 | 0,322 | Invalid |
| 2 | 0,3610 | 0,226 | Invalid |
| 3 | 0,3610 | 0,124 | Invalid |
| 4 | 0,3610 | 0,128 | Invalid |
| 5 | 0,3610 | 0,540 | Valid |
| 6 | 0,3610 | 0,344 | Invalid |
| 7 | 0,3610 | 0,160 | Invalid |
| 8 | 0,3610 | 0,679 | Valid |
| 9 | 0,3610 | 0,120 | Invalid |
| 10 | 0,3610 | 0,039 | Invalid |
| 11 | 0,3610 | 0,540 | Valid |
| 12 | 0,3610 | 0,039 | Invalid |
| 13 | 0,3610 | 0,474 | Valid |
| 14 | 0,3610 | 0,453 | Valid |
| 15 | 0,3610 | 0,428 | Valid |

Based on the results of the validity and reliability tests conducted in the trial class, six items in the validity test had a significance value greater than 0.361, indicating that the test instrument is sufficiently valid. Meanwhile, the reliability test showed a Cronbach's Alpha value of 0.680, which is greater than 0.6, indicating that the instrument is reliable. This value suggests that the test instrument is adequately capable of measuring the research variables. The data analysis conducted on Class 8.1 (experimental) and Class 8.7 (control) regarding students' learning outcomes in the Islamic Religious Education (PAI) subject produced the following interpretation:

1. Normality test

The normality test is used to see whether the collected data is normally distributed or not. Data is declared normal if the significant value is $> 0,05$. The following data is the result of the normality test in the study.

Table 2. Description of the Results of the Normality Test

| | Kelompok | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|------|----------|---------------------------------|----|-------|--------------|----|-------|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| Data | 1.00 | .188 | 31 | .007 | .925 | 31 | .032 |
| | 2.00 | .230 | 30 | <.001 | .858 | 30 | <.001 |

a. Lilliefors Significance Correction

The Shapiro-Wilk normality test yielded significance (Sig) values of 0.001 for the experimental class and 0.032 for the control class, indicating a deviation from normal distribution. Consequently, due to the non-normal distribution of the post-test data, the researchers proceeded to perform a Mann-Whitney U test.

Table 3. Description of the Results of the Man Whitney U test

| Test Statistics ^a | |
|--------------------------------|-------------------|
| | Grub |
| Mann-Whitney U | 11.000 |
| Wilcoxon W | 14.000 |
| Z | -.904 |
| Asymp. Sig. (2-tailed) | .366 |
| Exact Sig. [2*(1-tailed Sig.)] | .549 ^b |

Based on the results in Table 4, a Mann-Whitney U value of 11.000 and a significance value of 0.549 were obtained. This significance value is greater than 0.05 (>0.05), indicating a significant difference between the experimental and control groups.

2. Homogeneity test

The homogeneity test is used to determine whether the variability within the research population is similar (homogeneous) or dissimilar (non-homogeneous). Based on the homogeneity test criteria, with a significance level of 0.05, the data is considered homogeneous if the significance value is greater than 0.05 (>0.05), leading to the acceptance of H₀. The recapitulation of the homogeneity test results for the control and experimental classes is presented in the following table:

Table 4. Description of the Results of the Homogeneity Test

| Tests of Homogeneity of Variances | | | | | |
|-----------------------------------|--------------------------------------|------------------|-----|--------|------|
| | | Levene Statistic | df1 | df2 | Sig. |
| Data | Based on Mean | 1.184 | 1 | 59 | .281 |
| | Based on Median | .690 | 1 | 59 | .410 |
| | Based on Median and with adjusted df | .690 | 1 | 53.287 | .410 |
| | Based on trimmed mean | 1.183 | 1 | 59 | .281 |

Based on the results of the homogeneity test in Table 5, the Levene’s test indicates that the significance value based on various calculation methods specifically the mean is 0.281. According to the testing criteria, if the significance value is greater than 0.05, the data are considered to have homogeneous variances. Therefore, it can be concluded that the data from the experimental and control groups are homogeneous. This indicates that the variances between the groups are consistent, thus meeting the assumption of homogeneity and making the data suitable for further statistical analysis.

3. T Test

The independent sample t-test in this study was used to examine the final abilities of the samples. The testing procedure is as follows. To test the above hypothesis, this study employed the pooled variance t-test formula.

Table 5. Description of the Results of the Independent Sample Test

| | | 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 | |
| Data | Equal variances assumed | 1.184 | .281 | -5.343 | 59 | <.001 | -1.62366 | .30386 | -2.23168 | -1.01563 | |
| | Equal variances not assumed | | | -5.327 | 56.251 | <.001 | -1.62366 | .30482 | -2.23422 | -1.01309 | |

Based on the analysis of the Independent Samples T-Test results, the Levene's test yielded an F-value of 1.184 with a significance of 0.281. Since this significance value is greater than 0.05, the assumption of equal variances is met, meaning the variances between the experimental and control groups are homogeneous. Consequently, the t-test was interpreted using the "equal variances assumed" row. Furthermore, the t-value was 5.343 with 59 degrees of freedom and a two-tailed significance of 0.001, which is less than 0.05. This indicates a statistically significant difference in the means between the experimental and control groups. The mean difference between the groups is 1.62366 with a standard error of 0.30386, and the 95% confidence interval for the mean difference ranges from 1.01309 to 2.23168. As this interval does not include zero, the results further confirm that the mean difference between the groups is statistically significant. Thus, it can be concluded that the learning model applied has a significant effect on the measured variable, supporting the research hypothesis that there is a significant difference between the experimental group using the specific learning model and the control group using conventional learning methods.

The results of this study indicate that the PQ4R learning model has a significant impact on students' learning outcomes. This suggests that the PQ4R approach can be an effective strategy for improving student achievement, particularly in the Islamic Religious Education (PAI) subject at SMP Negeri 5 Bandar Lampung. This is evidenced by the hypothesis test results using the Independent Samples T-Test, which showed a Levene's Test significance value (Sig.) of 0.281, indicating that the assumption of equal variances is met. Therefore, the analysis using the first row of the T-test output is considered valid. Further analysis revealed a t-value of 2.343 with 59 degrees of freedom (df) and a Sig. (2-tailed) value of 0.001. Since the significance value is less than 0.05, it can be concluded that there is a statistically significant difference in the mean scores between the two groups tested.

The PQ4R learning model was originally designed and proposed in 1972 by Thomas and Robinson. The name PQ4R is derived from the initials of each step in the process: Preview, Question, Read, Reflect, Recite, and Review (Istiqomah & Juansah, 2024). The PQ4R learning model can be used to help students understand what they are learning and assist them throughout the learning process. Classroom instruction that involves carefully reading textbooks becomes more effective when guided by this model (Sabrini et al., 2021). Students are encouraged to explore their ability to build a mental framework before learning by answering guiding questions that help them analyze the information they need from the reading text. After that,

they independently reread the text and search for the answers to the questions they have formulated (Nurhayati, 2021).

In this study, the implementation of the PQ4R model demonstrated a significant impact between the experimental group and the control group. The significant difference between the two groups indicates the effectiveness of the PQ4R learning model compared to the conventional approach (Triani, 2024). Students' learning outcomes can improve because the PQ4R learning model encourages them to be more active and engaged in the teaching and learning process (Rahmadia & Fatimah, 2021).

This study found, firstly, that the PQ4R model is effective in enhancing student engagement and learning outcomes. With its emphasis on active learning cycles, PQ4R focuses on understanding and retaining information through its six structured stages. Secondly, the study shows that PQ4R is well-suited for developing critical thinking skills, as reflection and application are central components of this approach.

In this study, I implemented the PQ4R learning model (Preview, Question, Read, Reflect, Recite, and Review) as an instructional approach for the experimental group. Based on the results of data analysis and hypothesis testing, a significant impact was found on students' learning outcomes compared to the control group that used a conventional learning approach. These findings indicate that the PQ4R model is more effective in improving student learning outcomes.

The significant difference between the two groups indicates that students taught using the PQ4R model have a deeper understanding of the material, particularly because this approach emphasizes an active and repetitive information processing method. During the preview and question stages, students are encouraged to build curiosity before thoroughly reading the material. Then, the read and reflect stages enable students to critically comprehend the content and connect it with their prior experiences or knowledge. The recite and review stages further strengthen students' memory of the material they have learned.

As a researcher, I observed that the PQ4R model not only helps enhance students' cognitive understanding but also encourages their active engagement in the learning process. Students become more focused, purposeful, and show enthusiasm in following the learning flow. Compared to the conventional teacher-centered approach, the PQ4R model provides students with the space to gradually and systematically build their own knowledge.

Furthermore, during the course of the study, I observed that the PQ4R model is also capable of accommodating students' different learning styles. With its various stages, students with visual, auditory, or kinesthetic learning preferences can more easily adapt to the material presented. This contributes to the overall improvement in learning outcomes within the experimental group.

Nevertheless, I also realize that the effectiveness of the PQ4R model greatly depends on the discipline in its implementation. Each stage must be carried out

accurately to achieve the desired results. In the context of this study, I made efforts to maintain consistency in conducting each learning session so that all PQ4R stages could be fully completed by the students.

The results of this study reinforce the findings of previous research conducted aqsa, sarwat, (2024); Dzulhikam (2020); Muhibbuddin (2021); Rahman & Erianjoni, (2022); Sabrini (2021) which states that the PQ4R model is effective in improving students' learning outcomes. This success is undoubtedly attributed to a systematic strategy, active student engagement, and support from a conducive learning environment. I hope this model can serve as a relevant and practical alternative for teaching, especially in learning that requires deep conceptual understanding.

4. Conclusion

This study proves that the PQ4R learning model has a significant effect on improving students' learning outcomes at the cognitive levels of analysis (C4) and evaluation (C5). The use of this model successfully develops students' critical and evaluative thinking skills better than conventional teaching methods. The significant difference in posttest scores between the experimental and control groups reinforces these findings. Therefore, the PQ4R model can be considered an effective alternative for enhancing the quality of higher-order cognitive learning outcomes. For future research, it is recommended to test the PQ4R learning model in other subjects and at different educational levels to broaden its applicability. Researchers are also encouraged to use a true experimental design if possible to improve the validity of the research findings. Additionally, employing more varied assessment instruments, such as written tests, observations, and portfolios, can provide a more comprehensive picture of learning outcomes. Exploring the combination of the PQ4R model with other instructional methods could further enhance overall teaching effectiveness.

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